THE EFFECTIVENESS OF CORPORATE GOVERNANCE AND EXTERNAL AUDIT ON CONSTRAINING EARNINGS MANAGEMENT PRACTICE IN THE UK

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A thesis submitted to Durham University in fulfilment of the requirements for the degree of Doctor of Philosophy

DURHAM UNIVERSITY
BUSINESS SCHOOL
2010

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ABSTRACT

Agency theory predicts that corporate governance and external audit enhance the convergence of interests between shareholders and managers. The primary objective of this thesis is to investigate the effect of corporate governance and external audit on constraining earnings management practice in the UK.

In this thesis, earnings management is measured using the magnitude of discretionary accruals as estimated by the performance matched discretionary accruals (Kothari et al., 2005) model. A review of the corporate governance literature reveals sixteen attributes that can impact on shareholders' perception of earnings quality due to their role in enhancing financial reporting integrity. The corporate governance attributes are organized in four categories: 1) Board Composition; 2) Audit Committee Effectiveness; 3) Non-Executive Directors' (NEDs) Commitment; and 4) Ownership Structures. The external audit factors include auditor independence and audit quality.

Two models are constructed and a set of hypotheses are stated. These models are tested using a sample consisting of the top 350 companies listed on the London Stock Exchange. Firms in the financial, mining and regulated industries are excluded due to different accrual choices and valuation processes. The study covers the period of four financial years (2003, 2004, 2005 and 2006). Nineteen hypotheses are derived from both models. These hypotheses are tested using univariate and multivariate techniques to determine if corporate governance attributes and external auditor factors significantly constrain discretionary accruals.

The results reveal that board size and independence, audit committee independence and expertise, nomination committee independence, chairman independence, the level of NED fees and an independent and specialised external auditor are negatively associated with earnings management at significant levels.

The primary contribution to knowledge of this research is its extension of the literature on the role of corporate governance and the external auditor in constraining earnings management practice in the UK. This study's results are useable by stock market participants in their evaluation of corporate governance and the role of the external auditor in enhancing earnings quality. The findings will also assist regulators in defining effective corporate governance attributes and assessing the disclosure of corporate governance practices.

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ABBREVIATIONS

AUDEXP	Audit Committee Competence
AUDIND	Audit Committee Independence
AUDMEET	Audit Committee Meetings
AUDSIZE	Audit Committee Size
AF	Audit Fees
ASX	Australia Stock Exchange
BLOCK	Blockholder Ownership
BRDIND	Board Independence
BRC	Blue Ribbon Committee Report
BRDMEET	Board Meetings
BRDSIZE	Board Size
CFO	Chief Financial Officer
CHAIRIND	Chairman Independence
ΔCasht	Change in Cash and Cash Equivalents in Year t
ΔCAt	Change in Current Assets in Year t
ΔCLt	Change in Current Liabilities in Year t
CEO	Chief Executive Officer
DEPt	Depreciation and Amortization in Year t
EBXAt	Earnings before Extraordinary and Abnormal Items in Year t
EM	Earnings Management
α β1 β 2	Estimated Parameters.
WOMEN	Gender Diversity
GLS	Generalized Least Square
GAAP	Generally Accepted Accounting Principals
PPE it	Gross property, plant and equipment of firm i at the end of year t
GROWTH	Growth
H	Hypothesis
INSTOWN	Institutional Ownership
IFRS	International Financial Reporting Standards
LEV	Leverage
MANGOWN	Management Ownership
NEDFEE	Non-Executive Directors fees
NOMIND	Nomination Committee Independence
NAF	Non-Audit fees
NDA	Non-Discretionary Accruals
NED	Non-Executive Director
NEDMEET	Non-executive Directors Private Meetings
OCt	Operating Cash Flow in Year t
OLS	Ordinary Least Square
OECD	Organisation of Economic Cooperation and Development

REMUIND	Remuneration Committee Independence
R&D	Research and Development
ROA	Return on Assets
ROE	Return on Equity
Δ REVit	Sales Revenues of Firm i in Year t Less Revenues in Year t
SOX	Sarbanes-Oxley Act
SEC	Securities and Exchange Commission
SIZE	Firm Size
SPEAUD	Industry Specialised Auditor
TA_{it}	The Book Value of Total Assets of Firm i at the end of Year t,
ΔREC_{it}	The Change in Accounts Receivables.
ε_{it}	The Residual
TAC_{it}	Total Accruals.

Declaration

I hereby declare that the materials contained in this thesis have not been previously submitted for a degree in this or any other university. I further declare that this thesis is solely base on my own research.

Murya Habbash

Statement of Copyright

"The copyright of this thesis rests with the author. No quotation from it should be published without the prior written consent and information derived from it should be acknowledged."

Murya Habbash

ACKNOWLEDGMENTS

All praise is to Allah, the Almighty, for having made everything possible and by giving me strength and courage to complete this work.

I am grateful to my principal supervisor, Professor. Robert Dixon. I cannot adequately express my gratitude to him for his undying belief in me from our first meeting and throughout difficult moments. Professor Dixon always provided me with guidance and the motivation necessary to complete this research.

Deep appreciation goes to my secondary supervisor, Dr. Aly Salama, for providing me with his great knowledge. Dr. Salama consistently provided me with insightful comments and directions on my work. His encouragement and patience undoubtedly resulted in significant contributions to the development of this thesis.

I am very fortunate to have been supervised by both of them. I have learned a great deal of useful knowledge from their academic expertise and their friendship.

I would like to thank my sponsor, King Khalid University, for financing my PhD studies and for supporting me through my study journey. I look forward to sharing my experience and knowledge.

I would also like to express my thanks to all members of staff in the Accounting and Finance Department at Durham Business School. My appreciation is also extended to the PhD office, IT office and Library staff for their generous support and assistance.

A great appreciation goes to my family. I am grateful to my mother, brothers and sisters for instilling in me a desire to achieve my goals and a commitment to finish what I start, however long that may take and however much they need me to be next to them. Their belief in me, their encouragement, and being proud of me, has always given me the motivation for this work which I would have never completed without their love and support.

My gratitude is due to Professor Yusuf Karbhari, Cardiff Business School, UK; Dr Riham Rizk, Dr Amir Michael, Ms Ann Woodhead and Dr Rebecca Stratling, Durham Business School, UK; for their support and comments. I would also like to thank Dr Khaled Hussainey, Stirling University Business School, UK; Tarek Abdel-Fattah, Mansoura University Business School, Egypt; Dr Sinan Abbadi, Al- Balqa' Applied University, Jordan; for their help and kindness. I am also appreciative of the friendship, support and comments of my fellow PhD candidates, especially Mrs Nooraisah Katmun, Mrs. Rohaida Basiruddin, Mr Prawat Benyasrisawat, Mr Salim Alghamdi, Mr Malek Alsharairi and Mr Abdella Dinga.

Last, but not least, I would like to express my deepest gratitude and my special thanks to Janette Bentham for her unending patience and tolerance over the period of this study. Thank you for your support and for being there to encourage and assist me all the way along.

Needless to say, none of the special people mentioned here share any responsibility for errors of fact or judgment that may have occurred in this work.

DEDICATION

This thesis is dedicated to the memory of my Father who passed away during my studies, and my beloved Mother who shares this dream with me.

Chapter One
Introduction

1.1 Earnings Quality and Earnings Management

The end of the 1990s and the beginning of 21st century have witnessed a series of corporate accounting scandals across the United States and Europe. Examples include Enron, HealthSouth, Parmalat, Tyco, WorldCom and Xerox. At the core of these scandals was usually the phenomenon of earnings management (Goncharov, 2005). Earnings management has been a great and consistent concern among practitioners and regulators and has received considerable attention in the accounting literature. It has been argued that earnings management masks the true financial results and position of businesses and obscures facts that stakeholders ought to know (Loomis, 1999).

The accounting numbers are deemed value relevant if they have significant association with equity market value (Barth *et al.*, 2001). Previous studies use equity market value as the valuation benchmark to assess the effect of accounting numbers on information used by investors and they suggest that shareholders use accounting earnings to estimate future returns (e.g. Lev, 1989; Beaver, 1998; Choi *et al*., 1997; Kallunki and Martikainen, 1997).

Reported earnings are considered by shareholders to be value relevant and useful in estimating future returns and thus earnings and share returns are expected to be related. A long line of empirical research has demonstrated that accounting earnings are related to share returns (Easton and Harris, 1991; Das and Lev, 1994; Liu and Thomas, 2000).

The general problem of this association is still a concern for accounting researchers. A weak earnings-returns association has been linked with low information content of reported earnings and several empirical studies provide evidence to support this view (e.g. Easton *et al.*, 1992; Kallunki and Martikainen, 1997). These studies observe that the low information content of earnings

significantly contributes to this weak association and that this low earnings quality is due to management manipulation activities.

Lev (1989) conducted a comprehensive review of 'market-based accounting research' on the information content of reported earnings and concludes that the explanatory value of earnings for share returns, and subsequently the usefulness of earnings disclosures, tends to be very low and sometimes negligible. Several explanations have been suggested for these disappointing results. However, Lev (1989) contends that the most likely cause of the poor statistical performance consistently found in the return-earnings research is bias, introduced by accounting measurement practices or creative "abuses" of the earnings measurement process.

Hence, Lev (1989) recommends that research on motives and consequences of financial reporting manipulation should be a fundamental part of the earnings quality research agenda. This has led to a large and growing body of empirical research that investigates the existence of earnings management.

Therefore, earnings quality becomes questionable when managers have an incentive to manage reported earnings opportunistically (e.g. Healy and Wahlen, 1999; Rosenfield, 2000; Dechow and Skinner, 2000.). This opportunistic behaviour alters shareholders' perception of the quality of reported earnings.

1.2 Corporate Governance, External Audit and Earnings Management:

As discussed earlier, opportunistic earnings management practice produces less reliable accounting earnings that do not reflect a firm's financial performance. Earnings management is likely to reduce the quality of reported earnings and its usefulness for investment decisions, thus reducing investor confidence in the financial reports. However, accounting earnings are more reliable and of higher quality when managers' opportunistic behaviour is reduced using monitoring systems (e.g. Wild, 1996; Dechow *et al*. 1996). Thus, stock market regulators and other investor protection agencies are concerned about earnings management, especially after the collapse of several large firms in recent decades and they have responded by enhancing corporate governance and the independence of external auditors.

One important monitoring system is corporate governance. Its primary objective is not to directly improve corporate performance, but to resolve agency problems by aligning management's interests with the interests of shareholders (Demsetz and Lehn, 1985). Gul and Tsui (2001) support the effectiveness of corporate governance as a monitoring system. Xie *et al*. (2001) and Klein (2002b), among others, show that corporate governance reduces management's ability to manage earnings.

External audit is perceived to be another important monitoring system that may help to align the interests of managers and shareholders and reduce the potential for opportunistic managers' behaviour. Cohen *et al*. (2007) note that the auditor bears great responsibility for reliable financial reporting when the audit committee's role is primarily ceremonial, although the committee's symbolic efforts can lead to effective questioning of management. Frankel *et al*. (2002) and Krishnan (2003) show that monitoring offered by an independent and high quality external auditor reduces management's ability to manage earnings.

Corporate governance and external audit therefore assist investors by aligning the objectives of management with the objectives of shareholders, thereby enhancing the reliability of financial information and the integrity of the financial reporting process (Watts and Zimmerman, 1986).

1.3 Addressing the Problem:

This study's primary objective is to investigate the effect of corporate governance and external audit on earnings management. Earnings management will be measured using the magnitude of discretionary accruals as estimated by the performance adjusted accruals model (Kothari *et al.*, 2005). Additionally, a review of the corporate governance literature reveals sixteen attributes that can impact on shareholders' perception of earnings quality due to their role in enhancing the integrity of the financial reporting process. These attributes represent four categories of corporate governance: Board of Director Composition, Non-Executive Director (NED) Commitment, Audit Committee Effectiveness and Ownership Structures. The external auditor factors include auditor independence and audit quality.

These attributes are selected based on any of the following reasons:

1-Corporate governance attributes that are expected to have an effect on earnings management behaviour based on the agency theory perspective that will be illustrated in chapter four. This includes the internal monitoring by boards of directors (Fama, 1980 and Fama & Jensen, 1983). Monitoring is performed by external audit (Anderson *et al*,. 1993), audit committees (Pincus *et al*., 1989 and Bradbury, 2006) and the use of NEDs (Fama, 1980 and Anderson *et al*., 1993).

2. Corporate governance attributes that the review of the prior literature reveals a scarcity of research in them. This includes attributes such as NED commitment, the composition of nomination and remuneration committees, independent and specialised auditor and gender diversity.

These attributes are used in this research to assess the impact of corporate governance and external auditors on earnings management. In line with the above illustration, the primary research question is:

"Do corporate governance and external audit constrain earnings management practice in the UK?"

In the light of the previous discussion, this research will examine the proposed research question using the UK inviroment. This choice is made due to the following justifications:

1. In November, 2003 the Financial Services Authority (FSA) in the UK has introduced the first comprehensive corporate governance code named Corporate Governance Combined Code (2003) which includes various new recommendations. However, comparing to the Sarbanes–Oxley Act (SOX) recommendations to US firms, the effectiveness of the recent amendments and recommendations of the UK code are still empirically untested.

2. There are a considerable number of studies that investigate the effectiveness of corporate governance on financial reporting quality, see for example (Xie *et al.* 2001, Klein 2002, Ashbaugh *et al*. 2003, Abbott *et al*. 2004, Yang and Krishnan 2005, Lin *et al.* 2006) in the U.S. (Koh 2003, Davidson *et al*. 2005, Hsu and Koh 2005, Benkel, *et al*. 2006, Baxter and Cotter 2009) in Australia. However, research on the effect of corporate governance on earnings management in the UK is very

scarce and there are only two studies (see, Peasnell *et al*. 2000a and Peasnell *et al*. 2005) that have studied this association and they used a sample period before the new corporate governance code recommendations and only covered very few corporate governance attributes.

3. The UK environment differs from USA and Australia in many ways that could affect the inferences of this research. For example, IFRS rather than domestic accounting standards are compulsory in the UK as adopted by other EU countries (Regulation (EC) No. 1606/2002). UK firms are also subject to different corporate governance recommendations and listing requirements.

   In addition, socialigical and cultural studies such as Hofstede (2001) has documentd that, while the UK and the US are similar in many respects, various organisational differences exist. In terms of corporate governance recommendations, there are considerable number of differences in the structure and composition of boards, executive compensation levels and audit committee functions (Monks and Minow, 2004; Coffee, 2005; Ferguson *et al*., 2004). Not only corporate governance but also the notion of earnings management is different in the two countries. Brown and Higgins (2001) argue that the extent to which US managers manage earnings is significantly higher than that by their counterparts in the UK.

4. Since the researcher is based on the UK, it might be more relevant to conduct this research using a sample of firms from the same country as it makes the researcher more aware of the country legislations, culture and business environment that are related to the research. Furthermore, the data availability of the UK firms makes it achievable to conduct such a heavily hand-collected based research.

1.4 Study Motivations

There are three main motivations for this study:

1. A review of the earnings management literature reveals a scarcity of research relating the phenomenon of earnings management to various corporate governance attributes such as NED commitment, the composition of nomination and remuneration committees and gender diversity. This review also reveals a scarcity of research relating to the role of the independent and specialised

auditor in constraining earnings management practice. There is, therefore, a strong incentive to investigate, empirically, the affect of these attributes on earnings management.

2. A review of the earnings management literature also reveals a scarcity of research relating to earnings management in the UK. There are very few studies that have investigated UK firms. The studies that do exist used old data and have some methodological limitations, such as using mis-specified earnings management measurements and neglecting some fundamental control variables, such as performance and growth. Therefore, a comprehensive study that considers the limitations of prior research is needed to improve and update earnings management research in the UK context.

3. Corporate governance codes in the UK have gone through long processes of amendment and improvement to form the current code. However, the effectiveness of the recent amendments and recommendations are still empirically untested. This research investigates the effectiveness of the Corporate Governance Combined Code (2003).

1.5 Contributions of the Study

Firstly, this research provides a novel contribution to earnings management literature, as it is the first to examine the affect of several corporate governance mechanisms on earnings management. This study contributes to the literature both by examining new corporate governance variables and by using more representative measures for previously used variables as follows:

1. Previous literature focuses mainly on NED independence. This research explores the effectiveness of NEDs' commitment using two different measures. First, the number of private meetings of NEDs without the presence of executive directors. Secondly, NEDs' fees as a sign of NED efforts and commitments. No previous study has tried to examine the effect of NEDs' commitment on earnings management.

2. There is no single published research that has addressed the issue of the effectiveness of the independent chairman in monitoring the firm's management with respect to earnings management. In this regard, this study makes a significant contribution towards understanding the interacting roles of the chairman and other NEDs.

3. Moreover, though previous studies have investigated the duality role of the chairman who is also the CEO, none has investigated the chairman's independence according to the Code's independence criteria. This study applies two different measures to capture the effect of the chairman's independence. According to the UK Corporate Governance Combined Code (2003), the chairman has certain criteria for independence. This study applies these criteria to each firm's chairman to determine his or her independence. This study also measures chairman independence according to the Code's independence criteria for NEDs. In particular, this study finds a result that suggests that the Code's criteria for chairman independence are too loose.

4. Prior research on corporate governance has addressed the role and effects of audit committees and the presence of independent directors (e.g. Dalton *et al*., 1998 and Klein, 2002b). The few existing studies on nomination committees look at characteristics and qualifications of board committee members or at the factors determining the introduction of such committees (Piderit, 1994; Vafeas, 1999; Carson, 2002). However, this is the first study to examine the effect of the independent nomination committee and the independent remuneration committee on the incidence of earnings management using UK data.

5. Very limited research has addressed the relationship between gender and the quality of reported earnings. No study has directly investigated the relationship between earnings management and gender diversity. It is worth mentioning that the findings of previous studies on this issue may not apply to the UK. Kang *et al.* (2007) argue that the generalisation of findings about board diversity and independence may not extend across national boundaries due to different regulatory and economic environments, cultural differences, the size of capital markets and the effectiveness of governance mechanisms. This is the first study to examine the relationship between the presence of women on company boards and earnings management practice as measured by discretionary accruals.

6. Unlike previous UK studies by Peasnell *et al*. (2000a, 2005) that use the number of shares owned by institutional investors over total number of shares outstanding as a measure for institutional

ownership, this study will measure institutional investors using a more representative measure of the average percentage of shares outstanding owned by institutional investors, as in Liu (2006).

Moreover, Hsu and Koh (2005) find that the association between institutional ownership and earnings management is not systematic across all firms and is context dependent. Cheng and Reitenga (2009) assert that the characteristics of institutional investors should be considered when examining the relationship between institutional investors and earnings management. Thus, besides using different measures of institutional investors from those used in previous UK studies, this is the first study to investigate the effect of the long-term and the short-term institutional investor in the UK.

7. This study will attempt to examine the relationship between earnings management and managerial ownership using a different measurement of managerial ownership from previous UK evidence by Peasnell, *et al*. (2005), but following some prior research (e.g. Hutchinson and Gul, 2004; Gul *et al*., 2002).

   Peasnell, *et al*. (2005) measured managerial ownership as equal to one when managerial share ownership is less than 5%, whereas managerial ownership in this study is measured by a more representative continuous variable. This study uses the percentage of total shares held by executive directors divided by the total number of shares.

8. In terms of audit committee characteristics, the UK Corporate Governance Code (2003) introduced audit committee expertise as a new recommendation. This is the first study to examine the effect of audit committee expertise on earnings management in the UK.

9. Studies that examine the mere presence of an audit committee, such as those of Peasnell *et al.* (2005), Osma and Noguer (2007), Siregar and Utama (2008), Baxter and Cotter (2009) and Lo *et al.* (2010), show inconclusive and conflicting results. The previous UK study (Peasnell *et al.*, 2005) examines the mere presence of an audit committee. This is the first study to examine the effect of an independent audit committee on earnings management in the UK.

10. In addition to extending the very limited research on the effect of audit committee size and as part of testing the effectiveness of the new Code recommendations, this study is the first to examine the effect of audit committee size on earnings management in the UK.

11. Larcker and Richardson (2004) argue that the previous mixed findings on the relationship between auditor independence and earnings management are due to overlooking the role of corporate governance. However, they omit a very important governance variable as they did not include audit committee characteristics (composition, expertise, diligence) in their investigation of the auditor independence and earnings management relationship. The audit committee plays a direct role in controlling earnings management and monitoring audit and non-audit services fees paid to the auditor. Therefore, this study extends the work of Larcker and Richardson (2004) and incorporates audit committee characteristics and auditor independence in the same model in order to investigate their effects on earnings management.

12. In the UK, the literature on audit quality and earnings management tends to focus on audit quality differences between the Big 4 and non-Big 4 auditors and implicitly treats the Big 4 auditors as homogeneous in terms of audit quality. This study takes the literature on the earnings management and audit quality relationship in the UK a step forward by using auditor industry specialisation as a proxy for audit quality and, for the first time, testing its relationship with earnings management in the UK.

13. This is the first study that controls for the effect of audit committee characteristics when testing the relationship between an industry specialist auditor and earnings management.

14. This study is the first to control for the effect of the International Financial Reporting Standards (IFRS) when testing the effects of corporate governance and external audit on earnings management. This study also controls for a wide range of other important variables and it is the first study in the UK that controls for the growth, performance and cross-listed firms, which strengthens the validity of the research results.

Secondly, in terms of the dependent variable, this research represents the first attempt to measure earnings management in UK firms using a performance adjusted discretionary accruals methodology. The second significant distinction between this study and prior research in terms of earnings management estimation is that earnings management is measured using two primary estimates. Both performance adjusted discretionary accruals (Kothari *et al*., 2005) and current accruals (Ashbaugh *et al*., 2003) are employed. Current accruals are more direct proxy for management discretion, whereas discretionary accruals measure indirect and proxy for long term discretion exercised by management (Ashbaugh *et al*., 2003). The use in this research of both proxies for earnings management enhances the validity and reliability of the results. The consistent results found between both proxies strengthen the conclusions drawn from this study's statistical analysis.

Thirdly, an interesting aspect of investigating this issue in the UK context is that the corporate governance codes in the UK have gone through a long process of amendment and improvement to form the current code. This research conducts the first examination of the relationship between corporate governance mechanisms and the extent of earnings management practice in the UK since the Combined Code on Corporate Governance (2003) was introduced. It will shed light on the effectiveness of the recent corporate governance recommendations on enhancing reporting quality in the UK.

Fourthly, the previous literature is mainly US-based. To the best of my knowledge, there is little research into the relationship between corporate governance mechanisms and managers' engagement in earnings management in the UK (see for instance, Peasnell *et al*., 2000a, 2005). Hofstede (2001) documents that, while the UK and the US are similar in many respects, various organisational differences exist. In terms of corporate governance recommendations, numerous international accounting research reports have identified a number of differences in the structure and composition of boards, executive compensation levels and audit committee functions (Monks and Minow, 2004; Coffee, 2005; Ferguson *et al*., 2004).

Not only corporate governance but also the notion of earnings management is different in the two countries. Brown and Higgins (2001) argue that the extent to which US managers manage earnings

is significantly higher than that by their counterparts in the UK. It is useful to extend previous empirical evidence by reference and comparison to the UK context.

Finally, this research provides evidence of the effect of corporate governance and the external auditor on earnings management practice and it identifies specific aspects of a firm's corporate governance and external audit that can attenuate agency costs imposed upon shareholders by managerial opportunism in the management of earnings. These are (a) independence of the board, independent chairman, independent audit committee and independent nomination committee, (b) large boards, committed NEDs and audit committee expertise, (c) an independent and industry specialised auditor and (d) firm size, cash flows and performance.

1.6 Structure of the Thesis

This chapter has discussed the background and rationale for this study, outlined the study's motives and specified the research question. The contributions made by this study have also been highlighted.

The remainder of this thesis is organised as follows. Chapter two provides a general understanding of the nature of earnings management and what motivates managers to practice it. Once this is established, this chapter will discuss the various methods of measuring earnings management. Then the monitoring devices of corporate governance and external audit will be illustrated and linked to earnings management.

The literature on the association between earnings management and both corporate governance and the external audit is reviewed in chapter three, which also provides a critical and comprehensive review of the various corporate governance attributes and external audit factors. The review of each variable concludes with identifying the literature gap and suggestions to bridge this gap.

Chapter four discusses the most common theoretical frameworks, such as agency theory, stakeholder theory, stewardship theory and institutional theory, that researchers have employed to explain and analyse the association between earnings management and both corporate governance

and external audit factors. Illustrations of agency theory, the theory adopted for this study, will be offered and its selection will be justified.

Chapter five outlines the methodological methods adopted in this study. Methods of measuring the selected dependent variable (earnings management) are illustrated. Then, each monitoring device is theoretically and empirically associated with earnings management, followed by research hypotheses. This chapter also illustrates the operationalisation of independent variables, identifies the data sources and describes the sample selection process. Analytical procedures are presented and choices of analytical methods are justified.

Chapters six presents and discusses the research results. It starts with descriptive statistics and correlation analysis; this is followed by the presentation of the results of the tested models and the inferences drawn from tests of the hypotheses. Findings are compared with prior research findings and differences are explained. Further analyses and robustness checks highlight extra findings and test the sensitivity of the main findings.

Chapter seven presents a summary of this research study and draws conclusions and implications. This chapter also highlights the study's potential limitations and it provides recommendations for various parties and avenues for future research.

Chapter Two
Background

2.1 Introduction

Earnings management can take many forms and include numerous deceitful actions. This chapter will provide a general understanding of earnings management and what may encourage managers' to practice it. On this basis, this chapter will then discuss methods of measuring earnings management. Then the monitoring devices of corporate governance and the external audit will be illustrated and linked to earnings management.

2.2 Earnings Management Definition

The literature does not offer a single accepted definition of the term 'earnings management'. One of the most used definitions is "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers." (Healy and Wahlen, 1999, p.365).

Another common definition is offered by Schipper (1989, p.92), who observes that "By earnings management I really mean 'disclosure management' in the sense of a purposeful intervention in the external financial reporting process, with a view to obtaining private gain for shareholders or managers".

Field *et al*. (2001) state that earnings management occurs when managers exercise their discretion over accounting numbers, with or without restrictions. Such discretion can be either firm value maximising or opportunistic. Thus, there are two types of earnings management, opportunistic and informative.

Opportunistic earnings management means that managers seek to mislead investors by pursuing the management's interests. The literature on this type of earnings management mainly originated with Healy (1985) who finds that managers use accruals to strategically manipulate bonus income. Stockholders lose when earnings management results in abnormal private gains for managers. This could take the form of increased compensation (Healy, 1985).

Indeed, evidence supports a widespread association between managerial compensation and higher degrees of earnings management. Burns and Kedia (2006), Cohen *et al*. (2004), Bergstresser and Philippon (2006) and Cheng and Warfield (2010) document that the use of discretionary accruals is more common at firms where top management compensation is closely tied to the value of stock and that this applies particularly when stock options are involved.

Informative earnings management which aims to enhance value maximisation was first enunciated by Holthausen and Leftwich (1983, cited in Beneish, 2001). Here, managerial discretion is a means for managers to reveal to investors their private expectations about the firm's future cash flows. Stockholders gain when earnings management is used to signal managers' private information (Healy and Palepu, 1995) or to reduce political costs (Watts and Zimmerman, 1986).

Earnings management extends to cover manipulations other than accounting choices. Though Fields *et al*.'s (2001, p.16) research review concerns accounting choice, their discussion included the comment that, "Although not all accounting choices involve earnings management, and the term earnings management extends beyond accounting choice, the implications of accounting choice to achieve a goal are consistent with the idea of earnings management."

Dechow and Skinner (2000) criticise the above definitions of earnings management because they do not clearly distinguish between 'earnings management' and 'fraud'. Fraud can be defined as "the intentional, deliberate, misstatement or omission of material facts, or accounting data, which is misleading and, when considered with all other information made available, would cause the reader to change or alter his or her judgment or decision" (The National Association of Certified Fraud Examiners, 1993, p.12).

Dechow and Skinner (2000) discuss the differences between the concepts of earnings management and fraud and suggest that there is only a fine line between them. Their attempt to distinguish between earnings management and fraud is presented in figure 2.1.
Therefore, there is wide variety of earnings management activities, and they cannot always be classified easily. There is a continuum that ranges from very conservative accounting and complete legitimacy at one extreme to fraud at the other.

However, Dechow and Skinner (2000) indicate that, in the case of aggressive accounting choices, it is difficult to differentiate between opportunistic earnings management and the legitimate exercise of accounting discretion without identifying the managerial incentives to manage earnings. This led to research on managers' incentives to manage earnings and this will be discussed in the following section of this chapter.

Of all the above definitions, Schipper's (1989) seems to be the most comprehensive as it emphasises that earnings management is a deliberate action, and that it includes any sort of manipulation that can affect financial reporting either through earnings numbers or any other accounting items, and can be either legitimate (within the Generally Accepted Accounting Principles (GAAP)) or illegitimate (accounting frauds). This manipulation can be committed to meet management objectives (opportunistic earnings management) or shareholders' objectives (informative earnings management).

Kaplan (2001, p.3) states that "If earnings management is considered unethical by financial statement users, then managers' and companies' reputations may suffer and companies' credibility in the financial markets may be damaged". Kaplan investigates whether shareholders and non-shareholders of a company perceive earnings management as more or less unethical, depending on the intent and technique of earnings management.

His experiment shows that it cannot be simply assumed that non-shareholders always perceive earnings management as unethical while shareholders' opinions depend on the earnings management's intent (individual managerial benefit versus company benefit).

These definitions agree that the prerequisite for earnings management is managers' intent, but there is no agreement about whether or not this intent is opportunistic. Subramanaym (1996) examines whether earnings management smoothing is opportunistic and he refers to earnings management only in relation to opportunistic behaviour but not when managerial discretion is used to improve earnings persistence and predictability.

Another point that can be drawn from the above definitions is that earnings management is not directly connected only with reported earnings, but it can impact on other accounting numbers. Thus, earnings management could occur in supplementary disclosures and may for instance target financial ratios instead of earnings.

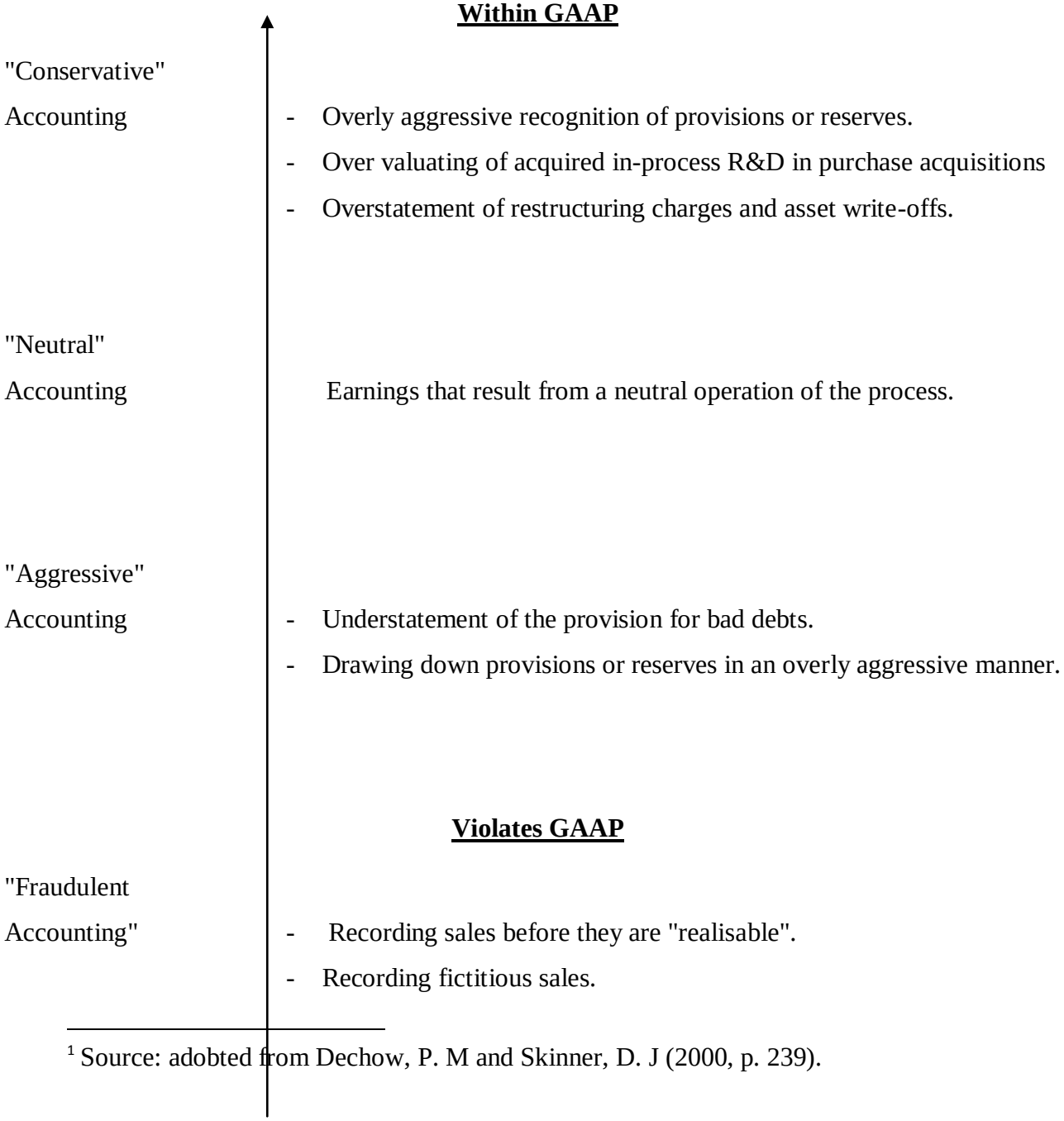
An essential question here is what activities can be regarded as earnings management? The nature of accrual accounting gives managers a great deal of discretion in determining the actual earnings a firm reports in any given period. The most common practice is to manipulate the timing of expenditures such as advertising expenses or outlays for research and development.

Firms can also, to some extent, alter the timing of recognition of revenues and expenses by, for example, advancing recognition of sales revenue through credit sales, or delaying recognition of losses by waiting to establish loss reserves. Other judgments which can come within the definition of earnings management include estimation of, for instance, the economic lifetime of assets and assets impairments.

Like most earnings management studies, this research uses Healy and Wahlen's definition, which assumes that earnings management occurs only for the purposes of masking deteriorating financial performance; the word 'mislead' in Healy and Wahlen's definition appears to exclude the possibility that earnings management can be informative for shareholders. Thus, in this study, the term 'earnings management' implies management opportunism.

Figure 2.1[1]

The distinction between earnings management and fraudulent financial reporting



[1] Source: adobted from Dechow, P. M and Skinner, D. J (2000, p. 239).

- Backdating sales invoices.
- Overstating inventory by recording fictitious

2.3 Earnings Management Incentives

Healy and Wahlen (1999) argue that, despite the popular wisdom that earnings management exists, it is remarkably difficult to document it convincingly. They recommend that analysts should first identify conditions in which managers' incentives to manage earnings are likely to be strong, and then test whether patterns of unexpected accruals are consistent with these incentives.

Prior literature has examined many different incentives for earnings management, but Healy and Wahlen (1999) identify three main types, namely, capital market, managers' contracts written in terms of accounting numbers, and political and regulatory requirements. Following this classification, the following section will illustrate these main types of incentive.

2.3.1 Stock Market Incentives

The interaction between reported earnings and stock prices can indeed push management towards earnings management. Kim and Yi (2006) find that discretionary accruals for publicly traded firms are greater than those for privately held firms by a magnitude of 1.2 percent of lagged total assets. This result supports the notion that stock markets create incentives for public firms to engage in earnings management.

Prior investigations of capital market incentives are typically concerened about these four main issues: (1) incentives for managers to meet stock market participants' expectations; (2) incentives for managers to manipulate earnings before initial public or seasoned equity offerings; (3) tests of whether investors are deceived by earnings management; and (4) evidence on the capital market consequence of earnings management. The incintives issues are discussed, in turn, in the following sub-sections.

Developed countries such as the UK are known for their widespread share ownership and their liquid and efficient stock markets. Investors often rely on the forecasts of stock market analysts to put together a portfolio of potentially successful firms.

Meeting the analysts' expectations is important as firms that meet or beat expectations generate higher returns, even when it is likely that this is achieved through earnings management (Bartov *et al*., 2004). On the other hand, missing an earnings benchmark has considerable negative implications for stock returns (Matsunaga and Park, 2001).

Thus, meeting or beating the analysts' forecasts to attract potential investors is considered highly important, and may encourage companies to engage in earnings management. If pre-managed earnings are below the forecast, managers could use income-increasing earnings management and when pre-managed earnings are higher than the forecast, managers might use income-decreasing earnings management to defer these returns to future reports.

Recent research also considers earnings management in specific stock market situations, such as an initial public offering (DuCharme *et al*., 2001). Companies that make an initial public offering do not have a previous stock price and their initial stock prices are mainly based on their financial performance before going public. Therefore, managers of 'going public' firms have an incentive to manage their earnings before their initial public offering in order to receive higher prices for their stocks.

The opposite of an equity offering, a share repurchase, can also incentivise managers to engage in earnings management. Bens *et al*. (2003) find that corporate managers use stock repurchases as an earnings management tool when earnings are below the level required to achieve the desired growth of earnings per share.

In relation to incentives for managers to meet stock market expectations, accounting earnings tend to be managed towards expectations in general, and towards earnings forecasts in particular. In this respect, the US evidence indicates that managers attempt to meet or beat four main earnings benchmarks. These earnings benchmarks are: meeting analysts' forecasts, reporting positive profits, sustaining last year's performance, and meeting management's expectations.

Payne and Robb (2000) study the effect of analysts' forecasts on earnings management, hypothesising that managers have incentives to use their discretion over accounting accruals to eliminate negative earnings surprises. They find that managers manage earnings upwards when pre-managed earnings are below analysts' forecasts. However, when pre-managed earnings exceed analysts' forecasts, managers either keep discretionary accruals for future periods by employing an income-decreasing strategy or preserve a positive earnings surprise with the aim of achieving a favourable share price reaction.

Abarbanell and Lehavy (2003) use financial analysts' stock recommendations of buy, hold or sell to predict the direction of earnings management. They find that firms that receive "buy" recommendations are more likely to manage earnings to meet or exceed analysts' forecasts, while firms that receive "sell" recommendations are more likely to engage in income-decreasing earnings management, suggesting that these firms have more incentives than other firms to create accounting reserves using earnings baths.

In terms of stock market incentives to report positive profits and maintain last year's performance, Burgstahler and Dichev (1997) examine the distribution of reported earnings around incentives to avoid reporting losses or a fall in earnings. They find that using earnings management to avoid annual losses and earnings decreases is common. More specifically, they find that 30-44 percent of firms with small pre-managed losses manage earnings to raise reported net income to a positive figure. Similarly, Degeorge *et al*. (1999) find that managers avoid losses but, once profitability is reached, they attempt to meet analysts' earnings forecasts.

Holland and Ramsay (2003) examine whether listed Australian companies manage earnings to report positive profits and to maintain the previous year's profit, and they find evidence of discontinuities in the distribution of reported earnings and changes in earnings.

Overall, it would seem that, for any specific period, managers prefer to manage reported earnings or to reduce analysts' earnings expectations with the intent of beating these expectations, rather than reveal disappointing earnings (Soffer *et al*., 2000).

2.3.2 Management Compensation Contracts Incentives

The studies quoted in section 2.3.1 illustrate incentives for managers to engage in earnings management to meet or beat expectations and thus to influence stock prices. This type of opportunistic behavior may be even more likely when managers also gain financial benefits from the firm's financial performance.

Therefore, it is argued that, in order to reduce agency costs and align shareholders' interests with managers' objectives, managers will enter into monitoring and bonding contracts which will help to align the interests of managers and shareholders. An example of such contracts is the management compensation plan which ties part of the management's rewards to its reported earnings.

In this respect, accounting numbers are usually used to establish the covenant conditions of compensation contracts and to monitor whether or not these conditions are breached. Watts and Zimmerman (1986) argue that managers in firms with earnings-based compensation contracts have incentives to report earnings results that maximise the value of their bonus awards.

The first study to investigate the impact of executive compensation plans on accrual decisions and accounting choices were conducted by Healy (1985) and it find that managers have an economic incentive to manipulate earnings in order to increase their cash compensation. He concludes that there is a strong association between accruals and managers' income-reporting incentives under a management bonus plan.

Leuz *et al*. (2003) investigate other types of managerial opportunistic behaviour such as excessive compensation for managers. They assert that such behaviour ultimately shows up in the firm's earnings. If compensation, stock option, bonus and other performance related payments are tied to earnings, there is an incentive for managers to manipulate earnings and an information asymmetry problem is created by offering unreliable and irrelevant financial statements. This scenario creates agency costs and leads to opportunistic management behaviour, such as earnings management.

The association between earnings management and insider trading is documented by Beneish and Vargus (2002), Park and Park (2004) and Cheng and Warfield (2010). Other studies, such as those of Baker *et al* (2003) and Bartov and Mohanram (2004), document the association between earnings management and management compensation using stock options.

2.3.3 Debt Contracts Incentives

In addition to possible conflicts of interests between shareholders and managers, there can also be a conflict between the interests of shareholders and those of debt holders; decisions that consider shareholders interests, for example excessive dividend payments, may not be in debt holders' interests.

Thus, this conflict can cause agency costs of debt. Jensen and Meckling (1976) argue that these costs can be borne by shareholders/managers if no action is taken to reduce them by monitoring and bonding contracts. It is assumed that managers have incentives to enter into monitoring and bonding contracts in order to reduce these agency costs of debt. Writing restrictive covenants in debt agreements is an example of these costs.

In this respect, accounting numbers are usually used to establish the covenant conditions of debt contracts and to monitor whether or not these conditions are breached. This implies that accounting policies that generate the accounting numbers are selected as a part of the wealth-maximizing process. Therefore, managers' wealth could be affected by any changes in the accounting policies and, hence, there are always incentives for managers to use specific accounting policies which enhance the firm's or their own future cash flows. Most of the prior research has focused on the contracting effects of mandatory changes in accounting policies.

Kasanen *et al*. (1996) examine whether firms close to violating their dividend covenant restrictions change their accounting techniques to increase those limits. They find evidence of dividend-based earnings management in Finnish companies that have owners who prefer stable dividends.

The main purpose of management compensation contracts is to limit management's ability to benefit investors over creditors. Therefore, debt contracts often contain restrictive covenants to limit

potential conflicts of interest between shareholders and debt holders. These covenants normally restrict the ability of management to pay dividends or issue new debt, or give debt holders the right to demand early repayment of the debt issue if minimum accounting numbers are not achieved.

Some other prior research investigates the impact of accounting restrictions in debt contracts on the managers' choice of accounting techniques. However, Fields *et al*. (2001) review the empirical research on accounting choices and conclude that the evidence on whether accounting choices are motivated by debt covenant concerns is inconclusive.

Hunt (1990) examines the debt covenants for a random sample of 187 firms and reports that more than half of the sample have a dividend covenant, about one third have a working capital covenant, 28% have a debt-equity ratio covenant and 18% have a stockholders' equity covenant. Therefore, using dividend covenants in debt contracts suggests that bondholders believe that, without this covenant, managers will not cut dividends to protect bondholders' interests.

Furthermore, Beatty and Weber (2003) provide convincing evidence on the effect of debt contracts in borrowers' accounting choices. They document that borrowers are more likely to make income-increasing rather than income-decreasing changes. Additionally, DeFond and Jiambalvo (1994) find that their sample firms accelerated earnings one year prior to the covenant violation.

2.3.4 Political and Regulatory Requirements Incentives

In addition to earnings management in order to influence shareholders' opinions and decisions, managers can also manage reported earnings in response to other stakeholders' concerns. Banking and governmental regulations that are based on accounting numbers, and tax laws, may be considered as possible sources of motives for earnings management.

Regulatory rules can put pressure on firms that would make them more prone to earnings management practice. For example, Haw *et al* (2005) investigate income-increasing earnings management in China as a response to governmental regulations demanding a minimum of 10% return on equity (ROE) for firms that desire to offer shares or issue bonds, and find a strong motivation for earnings management practice.

Johnston and Rock (2005) document evidence of income-decreasing earnings management in companies threatened by the Superfund Act. Moreover, D'Souza, Jacob and Ramesh (2001) present evidence for firms using earnings management to reduce labour renegotiation costs.

In terms of industry regulations, Key (1997) studies the role of accounting information in the political process surrounding regulation of the cable television industry. He investigates whether cable TV managers select accounting choices to mitigate congressional scrutiny and potential regulations and he find that such political costs can motivate earnings management practice.

In addition, Han and Wang (1998) provide evidence that oil companies used income-decreasing accounting policies during the Gulf War to avoid the political consequences of showing a higher profit from increased retail prices.

In terms of regulated financial institutions, prior research documents that managers have several incentives to manage earnings such as matching financial reporting with regulatory constraints. For example, Beaver and Engel (1996), and Liu *et al*. (1997) indicate that banks which are very close to minimum capital competence requirements are likely to manipulate accruals.

Jones and Sharma (2001) compare old economy firms and new economy firms listed on the Australian Stock Exchange over a ten-year period. They employ four different accruals proxies for earnings management and find that new economy firms have significantly less earnings management than old economy firms. They attribute this result to the stringent disclosure regime imposed on new economy firms by the Australian Stock Exchange Listing Rule 4.713, which requires a detailed quarterly cash flow statement under the direct method.

In the same respect, Black *et al*. (1998) examine the effects of accounting regulation on the level of earnings management in Australia, New Zealand and the UK. They find no evidence of earnings management in Australia and New Zealand; in contrast, they find strong evidence of earnings management in the UK before the change in the accounting standard on asset revaluation. Thus, managers may find deficiencies in the regulations as an incentive for earnings management.

2.4 Earnings Management Measurement Methods

Earnings management propensity is invisible and it can be considered successful only if it goes undetected. This makes earnings management measurement a challenging task for researchers. It is hard for investors to detect earnings management from looking at single cases but detection is less difficult if this phenomenon is studied using a large set of data to uncover systematic patterns.

Many empirical accounting studies examine whether managers manage earnings and under what conditions earnings management can be expected. In these studies it is commonly believed that accruals provide management with the opportunity to alter earnings. Therefore, abnormal accruals are used as an empirical indicator of earnings management (Bowman and Navissi, 2003; Batov *et al*., 2001; Teoh *et al*., 1998a, 1998b; Dechow *et al*., 1995; DeFond and Jimbalvo; 1994; Boynton *et al*., 1992; Jones, 1991). Accounting accruals are the favoured instrument for earnings management rather than cash earnings, which are less likely to be managed because they are hard to manipulate (Schipper, 1989; Burilovich and Kattelus, 1997).

Therefore, measuring the proportion of earnings that are not managed is the first step in measuring earnings management in a firm. Discretionary and non-discretionary accruals are used to measure managed and unmanaged earnings, respectively. As pointed out by Healy (1985), management exercises discretion over discretionary accruals only.

Earlier studies examine a specific accounting method choice or a single accrual (Zmijeswki and Hangeman, 1981; McNichols and Wilson, 1988). However, the second generation of earnings management studies, such as those of Healy (1985) and DeAngelo (1986) focus on total accruals. Total accruals are defined as the difference between cash from operations and net income. Accounting accruals are affected by choices of accounting method and accounting estimates made by managers in the past and currently.

In earnings management studies, it is important to segregate discretionary accruals from total accruals. In his information content study, Subramanyam (1996b) regress annual stock returns on operating cash flows, non-discretionary income and discretionary accruals. He finds that

discretionary accruals were associated with annual stock returns. The author interpreted this as implying that discretionary accruals are informative with respect to stock returns. Many studies show that accrual based accounting earnings are more informative with respect to stock returns than cash flows (e.g., Ebybum (1986) and Dechow (1994)).

Since discretionary accruals are not directly observable, many proxies and estimation techniques for detecting them are suggested. For example, Healy (1985) uses total accruals as a proxy for discretionary accruals and DeAngelo (1986) uses the change in total accruals as a proxy for discretionary accruals. Jones (1991) employs a more sophisticated approach to estimating earnings management and this is described in section 2.4.1.1 below.

McNichols (2000) discusses the research designs of the three most commonly applied designs in the earnings management literature: aggregate accruals, specific accruals and the distribution of earnings. One of the main arguments against using aggregate accruals models is that there is insufficient knowledge on how these accruals 'behave' in the absence of earnings management. Thus, McNichols argues that the way forward in earnings management research is specific accruals research design.

The frequency distributions approach introduced by Burgstahler and Dichev (1997) is another method used to distinguish between companies who are thought to practice earnings management and those who are probably not doing so. This method, although quite easy to put into practice, also attracts some criticism. This will be addressed in following section.

2.4.1 Aggregate Accruals Models

This is the most commonly used method by previous studies to measure earnings management. As mentioned earlier, accounting accruals consist of discretionary accruals, which are management determined, and non-discretionary accruals, which management cannot determine because they are economically determined. Discretionary accruals allow managers to exercise their discretion over accounting choices and estimates, and the literature documents that firms use discretionary accruals to practice earnings management (e.g. Bowman and Navissi, 2003; Batov *et al*., 2001, Kasznik, 1999; Dechow *et al*., 1995; Gaver *et al*., 1995; Holthausen *et al*., 1995; Warfield *et al*., 1995; DeFond and Jiambalvo, 1994; Sweeny, 1994; Cahan, 1992; Jones, 1991; Healy, 1985).

This method therefore requires a separation of accruals into discretionary and non-discretionary components in order to use the discretionary accruals as a proxy for earnings management. One major limitation of this method is the difficulty of identifying and separating total accruals into its unmanaged and managed components.

Aggregate accruals have several models ranging from the simple, in which the change in total accruals is used as a proxy for discretionary accruals, to the relatively sophisticated, which separate accruals into discretionary and non-discretionary components using regression analysis.

The models most frequently used by academic researchers for separating discretionary and non-discretionary accruals are the Jones (1991) and the modified Jones (Dechow *et al*. 1995) models, as documented by prior literature (e.g. Kothari *et al*., 2001; Bartov *et al*., 2001; Kasznik, 1999; Becker *et al*., 1998; Beneish, 1997; Guay *et al*., 1996; Subramanyam, 1996a; Dechow *et al*., 1995; DeFond and Jiambalvo, 1994).

There follows a brief explanation of the assumptions and limitations of each model followed by a discussion of the reasons for using or eliminating each model.

2.4.1.1 Jones (1991) model:

Following Kaplan's (1985) suggestion that total accruals are likely to result partly from managerial discretion and partly from changes in a firm's economic conditions, Jones (1991) proposes a model which controls for changes in the economic circumstances of a firm. Unlike Healy (1985) and DeAngelo (1986), who assume that non-discretionary accruals are zero or constant, here non-discretionary accruals are modelled as a linear function of the change in revenues and fixed assets.

It is assumed that while sales growth controls a firm’s non-discretionary working capital, the level of property, plant, and equipment controls the firm’s non-discretionary depreciation expense (Bernard and Skinner, 1996). The change in revenues is used as a proxy for the unmanaged change in revenues.

The Jones model regresses total accruals on gross property, plant and equipment and changes in revenues which provide coefficients that are then used to estimate unmanaged accruals. The regression residuals are considered to be managed accruals (Xiong, 2006).

Equation 1: Jones (1991) non-discretionary accruals model:

$TAC_{it} = \alpha (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} / TA_{it-1}) + \beta_2 (PPE_{it} / TA_{it-1}) + \varepsilon_{it}$

Where:

- TAC_{it} is total accruals.
- TA_{it-1} is the book value of total assets of firm i at the end of year t -1,
- Δ REVit / TA_{it-1} is sales revenues of firm i in year t less revenues in year t – 1 scaled by TA_{it-1},
- PPE it / TA_{it-1} is gross property, plant and equipment of firm i at the end of year t scaled by TA_{it-1},
  - α $\beta 1$ $\beta 2$ are estimated parameters.
  - ε_{it} is the residual

The non-discretionary and discretionary accruals are computed as the forecasted value and the prediction error respectively. One major limitation of this model lies in the assumption that managers do not exercise discretion over revenues and this can lead to misspecification of the discretionary accruals when managers do exercise discretion over revenues. It may also provide biased accruals because it omits expenses. More details will be presented in the discussion of modified Jones model below, as it is considered to be an extension of the Jones model.

2.4.1.2. Modified Jones Model

Dechow *et al.* (1995) realised that the weakness of the Jones (1991) model lies in its assumption that total revenues are non-discretionary and they assumed that only collected revenues are non-discretionary. Dechow *et al*. (1995) provide evidence that their model is more powerful than the Jones model at detecting cases of revenue manipulations. Under the modified Jones model, total accruals are regressed on gross property, plant, and equipment and the change in revenues are adjusted for changes in receivables.

A number of studies examine the relative performance of discretionary accrual models. For example, Dechow *et al*. (1995) examine five discretionary accrual models including those of Healy (1985), DeAngelo (1986), the industry model by Dechow and Sloan (1991), the Jones (1991) model

and the modified Jones model suggested by Dechow *et al*. (1995). They compare the performance of the five models using four samples: (i) a random sample; (ii) a sample of firm-years experiencing extreme financial performance; (iii) a sample of firm-years with artificially induced earnings management; and (iv) a sample of firm-years in which the SEC alleged that earnings were overstated. They find that the Jones model and Dechow *et a1*.'s (1995) modified Jones model are best in detecting earnings management.

The Jones (1991) and Dechow *et al.* (1995) models were originally introduced as time series. However, DeFond and Jiambalvo (1994) propose a cross-sectional Jones model rather than a time series model and many recent studies have used cross-sectional discretionary accruals (e.g. Subramanyam, 1996a; DeFond and Subramanyam, 1998; Becker *et al*., 1998; Peasnall *et al*., 1998; Teoh *et al*., 1998a, 1998b; Klein, 2002b; Xie *et al*., 2003; Abdul Rahman, 2006; Jiang *et al*., 2008; Siregar and Utama, 2008; Chang and Sun, 2009; Jaggi *et al*., 2009 and Baxter and Cotter, 2009). Some of these studies' arguments will be summarised in the following discussion, and the selection, for the purposes of this study, of the cross-sectional version rather than the time-series version will be justified.

Peasnell *et al*., (2000b) discuss the appropriateness of the assumption in the time series Jones model that coefficient estimates on change in sales and the level of property, plant and equipment remain stationary over time. They add that using cross-sectional accruals models help to avoid the survivorship bias problems inherent in the time-series approach. Moreover, under time-series models, the self-reversing property of accruals may introduce specification problems in the form of serially correlated residuals. Lastly, they state that this model allows the inclusion of firms with short histories.

Subramanyam (1996b) and Bartov *et al*. (2001) used the Jones (1991) and modified Jones (Dechow *et al*., 1995) models to evaluate whether cross-sectional models are similar to time-series models in providing reliable estimates of discretionary accruals. They find that the cross-sectional Jones and the cross-sectional modified Jones models perform better than their time-series counterparts in detecting earnings management.

The cross-sectional model is usually estimated by year and industry. Therefore, the cross-sectional Jones model controls for year and industry specific effects. Additionally, Subramanyam (1996b) and Peasnell *et al*. (2000b), elaborate that cross-sectional models usually yield larger samples and more observations and do not assume the stationarity of the discretionary accrual models.

Subramanyam, (1996b) argues that all studies that use the Jones model prefer the cross-sectional version of the model over the time-series version for three main reasons. First, the time-series method requires an estimation period for each firm of at least 8-10 years; the cross-sectional version usually produces a larger sample. Secondly, the long period that is required to estimate the time-series method uses an estimation which makes it more exposed to serial correlation statistical problems that increase the possibility that model will be mis-specified due to non-stationarity. Finally, due to the overlap between estimation and event periods, the time-series method weakens the power for tests when earnings management is examined for different periods.

Dechow *et al*. (1995) conclude that their version of the modified Jones model is superior to all other currently available models, though it remains imperfect. One disadvantage is the implicit assumption made by the cross-sectional model that the discretionary accrual model is the same for every firm in an industry, regardless of its operating strategy or the stage in its product life cycle. If firms in an industry are not homogeneous, the estimated discretionary accrual model will suffer from measurement errors.

The modified Jones model regresses total accruals on gross property, plant, and equipment and changes in cash revenues to provide coefficients that are then used to estimate unmanaged accruals as follows:

Equation 2: Dechow *et al*. (1995) modification of the cross-sectional Jones non-discretionary accruals model:

$$TAC_{it} / A_{it} = \gamma 0\ (1/A_{it-1}) + \gamma 1\ ((\Delta REV_{it} - \Delta REC_{it})/A_{it-1}) + \gamma\ 2\ (PPE_{it} / A_{it-1}) + \varepsilon_{it}$$

Where:

- TAC_{it} is total accruals.
- TA_{it-1} is the book value of total assets of firm i at the end of year t -1,

- Δ REV $_{it}$ / TA $_{it-1}$ is sales revenues of firm i in year t less revenues in year t – 1 scaled by TA $_{it-1}$,
  - Δ REC $_{it}$ is the change in accounts receivables.
- PPE $_{it}$ / TA $_{it-1}$ is gross property, plant and equipment of firm i at the end of year t scaled by TA $_{it-1}$,
  - α β1 β 2 are estimated parameters.
  - ε_{it} is the residual

2.4.1.3 Performance Matched Discretionary Accruals

Dechow *et al*. (1995) and Kasznik (1999) find that the results estimated by the Jones model indicate that discretionary accruals are significantly positively associated with the return on assets (ROA). To overcome this problem of performance related misspecification, some recent studies by Kasznik (1999), Bartov *et al*. (2001) and Kothari *et al*. (2005) remove the potential effects of this correlation between discretionary accruals and earnings performance by employing a matched-firm or portfolio technique to adjust the discretionary accruals.

Kothari *et al*. (2005) argue that the discretionary accruals, as estimated by both Jones and modified Jones models, may result in severe measurement error in discretionary accruals when these models do not control for the prior performance of the company. They propose a model that includes an intercept and control for the firm's performance using the lag of return on assets (ROA) to mitigate the problematic heteroskedasticity and mis-specification issues of the Jones and modified Jones models in estimating accruals.

Kothari *et al*. (2005) examine the power of the Jones and modified Jones discretionary accruals and retested them after adjusting for performance. Their results suggest that performance-matched discretionary accruals enhances the reliability of inferences from earnings management research when the hypothesis being tested does not imply that earnings management will vary with performance, or where the control firms are not expected to engage in earnings management.

They suggest adding the return on assets of the previous year (ROA) as an additional regressor to the cross-sectional modified Jones model. As this study does not examine a specific event, and consistent with Kothari *et al*. (2005) and Kasznik (1999), it also deducts the receivables change from the revenues change in estimating the coefficients. Therefore, this study will estimate the

discretionary accruals based on the Kothari *et al.* (2005) model by the residuals of the following cross-sectional regression using firms within the same two-digit industry SIC code to estimate the parameters. Thus, the discretionary accruals will be estimated by the residuals of the following cross-sectional model:

Equation 4: Kothari *et al.* (2005) performance matched accruals model

$$TAC_{it} = \acute{\alpha} (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \beta_2 (PPE_{it} / TA_{it-1}) + \beta_3 ROA_{it-1} + \varepsilon_{it}$$

2.4.2 Measuring Total Accruals

As mentioned earlier, total accruals need to be computed first in order to estimate discretionary accruals. The literature offers two methods for computing total accruals. The first is the traditional balance sheet approach that is used in the majority of prior studies (e.g. Healy, 1985; Jones, 1991; Dechow *et al.*; 1995; Peasnell *et al.*; 2000b; Kothari, 2001). The second method is the cash flow approach used by recent studies (e.g. Subramanyam, 1996b; DeFond and Subramanyam, 1998; Becker *et al.*, 1998; Klein, 2002b; Xie *et al.*, 2003; Abdul Rahman, 2006; Huang *et al.*, 2007 and Jaggi *et al.*, 2009). One of the reasons for the popularity of the balance sheet approach may be the availability of balance sheet statement data compared to cash flow statement data.

The balance sheet approach measures accruals as follows:

$$TAC_t = \Delta CA_t - \Delta Cash_t - \Delta CL_t + \Delta DCL_t - DEP_t$$

Where:

ΔCA_t Change in current assets in year t

$\Delta Cash_t$ Change in cash and cash equivalents in year t

ΔCL_t Change in current liabilities in year t

ΔDCL_t Change in debt included in current liabilities in year t.

DEP_t Depreciation and amortization expense in year t

While the balance sheet approach omits non-current accruals (except for depreciation and amortization), the cash flow approach accounts for both current and non-current accruals. Omitted non-current accruals transfer accruals from current earnings to future earnings and are not captured by the balance sheet approach.

Under the cash flow approach, total accruals are measured as follows:

$TAC_t = EBXA_t - OC_t$

Where:

$EBXA_t$ Earnings before extraordinary and abnormal items in year t

OC_t Operating cash flow in year t

Collins and Hribar (2002) compare these two approaches in four different sample characteristics, and find empirical evidence that the balance sheet approach is less efficient than the cash flow approach when firms experience mergers or acquisitions. They argue that some non-articulation events such as mergers and acquisitions may break down the linkage between changes in balance sheet working capital accounts and accrued revenues and expenses on the income statement. This may result in the total accruals estimated using the balance sheet method including significant measurement errors compared with total accruals as measured directly using the cash flow statement method.

Collins and Hribar (2002) also find that the balance sheet approach has a high frequency and magnitude of significant errors. They add that the balance sheet approach is biased in measuring accruals for firms with discontinuing operations that can be considered discretionary items. This is also due to the break down in the presumed articulation in the balance sheet approach.

As the Kothari model detects the net effect of all accounting estimations and choices that influence reported earnings, this approach will be used in this study because the corporate governance and auditing literature does not specify that certain accounting manipulations can be directly related to either corporate governance or external audit. McNichols (2000) argues that the aggregate accruals models approach allows for control of additional variables, including corporate governance and external audit attributes.

2.4.3 The Specific Accrual Method

Most of the earnings management research relies upon total accruals rather than specific accruals to detect the incidence of earnings management. Healy and Wahlen (1999) argue that there is

remarkably little evidence on earnings management using specific accruals. They add that specific accruals research can provide useful information for standard setters about the deficiency of standards. Similar to the aggregate accruals studies, this alternative approach models the behaviour of each specific accrual in order to identify its discretionary and non-discretionary components

Some studies examine earnings management using only a specific accrual, such as bad debt provisions (e.g., McNichols and Wilson, 1988), depreciation (e.g., Teoh *et al*., 1998b), and deferred tax (e.g., Philipps *et al*., 2003 and Teoh *et al*., 1998b). For example, Philipps *et al*. (2003) suggest using deferred tax expense accruals to detect earnings management, along with discretionary accruals. They provid evidence that this expense is incrementally useful, beyond total accruals and discretionary accruals derived from two Jones-type models, in detecting earnings management which aims to avoid a small loss or an earnings decline.

This specific accrual approach has some disadvantages; if the accrual being examined is managed, earnings management can be detected but otherwise there will be a misleading conclusion of no earnings management. Moreover, it is usually difficult to identify the specific accrual used to manage earnings. Even if the specific accrual is managed, the effect of managing any one accrual by itself may not be large enough to achieve statistical significance.

It is logical to assume that managers use more than one accrual when managing earnings. Therefore, while the single accrual method is effective in detecting earnings management in some circumstances, it fails to detect earnings management under most circumstances (McNichols and Wilson 1988). Moreover, construct validity is lower for the single accrual method than for the total accrual method because a single accrual can be easily influenced by other variables. For example, an income-increasing change in a firm's bad debt provision could be the result of earnings management but it could also be the result of a change in the firm's credit policies or simply a change in overall economic conditions.

McNichols (2000) shows that the specific accrual models approach is not flexible in investigating additional variables, such as corporate governance and external audit attributes. Thus, for research that aims to explore the association between earnings management and other hypothesised factors, a

specific accrual model is meaningless because it requires a separate model for each accrual likely to be influenced by the hypothesised factors.

Beneish (1999) also mentions some limitations of this model; it highly mis-classifies earnings manipulators, and it can only be employed in research examining income-increasing earnings manipulation. McNichols (2000), additionally argues that using a specific accrual model may limit the generalisability of the findings, because of the small number of firms for which a specific accrual is managed. Another significant disadvantage is that, if it is not clear which accrual management might be used to manage earnings, and then the power of a specific accrual test for earnings management is reduced.

Therefore, the specific accrual approach does not serve the aim of this study as no prior study has identified a particular accruals item that is specifically associated with either corporate governance attributes or external audit factors.

2.4.4 The Distribution Method

The distributional approach proposes that managers have incentives to meet certain earnings thresholds such as reporting positive profits, or avoiding losses. The distribution of reported earnings around these thresholds can identify if the incidence of amounts above and below the thresholds are distributed smoothly, or if they reflect discontinuities due to earnings management.

Some recent studies use this method to test the prevalence of earnings management in order to avoid reporting losses and/or earnings declines. Burgstahler and Dichev (1997) examin the distribution of earnings changes and reported earnings. They find a higher frequency of firms with slightly positive earnings (or earnings changes) than firms with slightly negative earnings (or earnings changes).

Ayers *et al*. (2006) examine whether the association between discretionary accruals and beating earnings benchmarks hold for comparisons of divided groups based on earnings, changes in earnings and earnings surprises. Their results suggest that the positive association between discretionary accruals and beating the earnings benchmark extends to other points in the distribution of both earnings and earnings changes. This means that a mere positive association between discretionary

accruals and meeting or beating earnings targets is not sufficient to conclude that discretionary accruals detect earnings management. Dechow *et al*. (2003) observe that since both firms that report a small profit and firms that report a small loss show similar positive discretionary accruals, it is doubtful that the desire to achieve benchmarks is the only explanation for the curve in the distribution of earnings. They propose other explanations, such as real action to beat the benchmark and the effect of the denominator.

Xiong (2006) claim that this approach is more objective in terms of detecting the prevalence of earnings management than the other methods previously discussed. Conversely, Healy and Wahlen (1999) conten that this approach has failed to detect the extent of earnings management and the specific methods or accruals that are used for earnings management.

Durtschi and Easton (2005) argued that there is no unequivocal evidence supporting the pervasive presumption that the discontinuities at zero in the frequency distribution approach are merely due to earnings management practice. They provide evidence suggesting that the discontinuity is likely to reflect a tendency for analysts to avoid coverage of firms with small loses, rather than being an indication of earnings management.

The assumption of symmetry used by the frequency distribution approach in Burgstahler and Dichev (1997) to test for the prevalence of earnings management is criticised by Holland (2004) who concludes that this assumption can only be justified where there is a known symmetrical distribution for the data in question.

Durtschi and Easton (2005) conclude that the shape of the distribution pattern is not sufficient evidence of earnings management. They provide evidence that the shape of frequency distributions around zero earnings is affected by deflation, by sample selection criteria and/or by differences between the characteristics of observations to the right and to the left of zero. Their findings contradict those of Burgstahler and Dichev (1997) for the distribution of deflated earnings who find no discontinuities around zero in the distribution of net income, earnings per share and diluted earnings per share. This might be caused by the deflator if it is different for firms above and below the earnings benchmark.

McNichols (2000) argues that the frequency distribution approach does not differentiate between discretionary and non-discretionary accruals, so it does not satisfy the need to measure management's incentives to manage earnings. She adds that the frequency distribution approach provides results specifying which group of firms will manage earnings rather than forming a better measure of discretionary accruals, which the propositions of this study require.

To conclude, aggregate accruals models seem to have significant advantages over other models, both theoretically and empirically. Furthermore, the large number of studies that used aggregate accruals models indicates a wide acceptance of the aggregate accruals approach as a proper proxy for earnings management. As a result, the measurement of total accruals in this research is based on aggregate accruals (the cross-sectional performance matched discretionary accruals model) using the cash flow approach, which will be used to divide accruals into discretionary and non-discretionary items. The level of discretionary accruals will then be used as an empirical indicator of earnings management.

2.5 Earnings Management Monitoring Devices

2.5.1 Corporate Governance Effectiveness as a Monitoring Device

In a speech to the Global Corporate Governance Forum (2000), cited in (Cadbury, 2002, p.13), Sir Adrian Cadbury defines the aims of corporate governance, saying "The corporate governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society".

Additionally, the Organisation of Economic Cooperation and Development (OECD) defined corporate governance as "The system by which business corporations are directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among different participants in the corporation, such as the board, managers, shareholders and other stakeholders and spells out the rules and procedures for making decisions on corporate affairs. By doing this, it also provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance" (OECD, April 1999).

As will be detailed in chapter 4 on the theoretical framework of this research, the separation of ownership and control in modern corporations can give rise to the potential for conflicts of interest between owners and their agents who manage the day-to-day operation of the company. Jensen and Meckling, (1976) argue that managers (the agent) act on behalf of the shareholders (the principal), who are the actual owners of the firm. This relationship empowers the managers' position and leaves the firm's shareholders with no control over the decision-making processes.

Jiraporn *et al.* (2008) argued that firms that are more informationally opaque may engage in more earnings management because a higher degree of asymmetric information makes it more difficult for shareholders to monitor managers. Thus, in the absence of effective control procedures within the firm, managers are more likely to take decisions that deviate from the interests of shareholders. As a result, managers may be better able to abuse their discretion over earnings, such as engaging in earnings management, thereby increasing agency costs. Hence it is argued by Fama and Jensen (1983b) that firms need a system that can separate decision management from decision control in order to limit agency costs. Corporate governance can provide this desirable system or at least part of it. Such a system limits the power of management to disregard the interests of shareholders, thereby decreasing agency costs. This claim is also documented by Fama, (1980), Fama and Jensen, (1983b) and Williamson (1988). These studies argue that corporate governance mechanisms constrain managerial opportunism. According to Hart (1995), a major part of corporate governance is designing checks and balances on opportunistic behaviour by managers.

Over the last two decades, large and growing consideration has been given to the importance of different corporate governance mechanisms for monitoring managers' discretion, including their discretionary financial reporting. Investors and regulators believe strongly that corporate governance mechanisms such as independent directors on the board and audit committees help to protect the shareholders' interests and alleviate any conflict of interest between shareholders and managers. For example, the former SEC chairman (Levitt, 1998) recommends that the SEC needes to pay more attention to the effect of corporate governance mechanisms on financial reporting.

The Sarbanes-Oxley Act (2002) suggests that corporate governance should impact on shareholders' perception of the information content of accounting earnings. The UK Corporate Governance Combined Code (2003) emphasises the impact of these mechanisms in enhancing the quality of accounting information. The Code (2003, p.4) states that, "the board members should satisfy themselves on the integrity of financial information and those financial controls and systems of risk management are robust and defensible". The same Code (2003, p.16) added that the "audit committee's role is to monitor the integrity of the financial statements of the company, and any formal announcements relating to the company's financial performance, reviewing significant financial reporting judgments".

Empirically, it is widely accepted that governance practices limit a manager's ability to manipulate earnings (see Beasley, 1996; Dechow, *et al*., 1996; McMullen and Raghunanadan, 1996; Peasnell *et al*., 2000a; Chtourou *et al*., 2001; Xie *et al.*, 2003; Park and Shin, 2004; Peasnell *et al.*, 2005; Kim and Yi, 2006; Chen *et al*., 2007; Huang *et al*., 2007 and Jaggi *et al*., 2009).

Accordingly, in order to constrain any divergence in interests and to ensure appropriate accountability of resources, an organization needs a comprehensive structure of controls that encourages efficient performance and responsible behaviour. Corporate governance is used to deter any conflict of interests between shareholders and managers that may result in earnings management behaviour causing a reduction in shareholder wealth.

In today's corporate environment, good governance structures include an adequately functioning audit committee, a thoughtfully composed board of directors, a balanced ownership structure, and an independent and vigilant external auditor.

Cohen, *et al* (2002, p.587) recognises that "…one of the most important functions that corporate governance can play is in ensuring the quality of the financial reporting process". Thus, effective oversight of the financial reporting process by the aforementioned monitoring mechanisms is thought to improve the accuracy of reports to shareholders and act as a deterrent against possible opportunistic behaviour by managers.

The enhancement of corporate governance practice can be observed in the increase in the appointment of independent or non-executive directors (NEDs) on corporate boards. Stockholders have exerted an escalating pressure on their firms to reduce the number of inside directors on their boards under the assumption that NEDs provide more objective oversight of the financial reporting process. For example, Heidrick and Struggles (1990) reports that the proportion of executive directors of the largest US corporations gradually decreased during the 1980s from 31 percent to an average of 21 percent.

Additionally, in terms of the role of NEDs, Fama and Jensen (1983) argue that the role of the board of directors is to protect the interests of shareholders by monitoring the firm's management. Fama (1980) also argues that outside directors are "referees" between shareholders and managers. These outside directors are disciplined by the market for their services; the increasing litigation directed at boards enhances this argument. For example, only 1 in 20 boards was sued in the 1960s, 1 in 9 was sued in the 1970s, and 1 in 5 faced a lawsuit during the 1980s (Kesner & Johnson, 1990).

The monitoring role of independent directors is also exercised through their membership of the board's sub-committees. Thus a high representation of NEDs in the audit, nomination, and remuneration committees provides an oversight of the firm's financial reporting process on behalf of the board of directors. The independence of the chairman of the board from the CEO and other executive managers is also considered to be a good corporate governance practice.

It is not only the independence of directors that enhances corporate governance practice but also their commitment. An active board and active board sub-committees with committed NEDs are essential characteristics of effective corporate governance. Independent NEDs who devote little time to, or interest in, monitoring the company may not carry out their responsibilities.

In addition to the effect of independent directors on the board and board sub-committees, other effective corporate governance factors include the company's ownership structure. Where institutional investors and blockholders hold a large percentage of the shares, their voting power may enable them to supervise managers' decisions.

2.5.2 External Audit as a Monitoring Device

External audit is a governance mechanism that reviews and evaluates a firm's internal controls and audits its financial statements in order to prevent material mis-statements. Auditors of higher quality are less willing to accept doubtful accounting methods and are more likely to report errors and irregularities revealed during the audit work. Thus, the external auditor is considered to have an impact on the efficacy of a firm's monitoring function, and hence constrains the incidence of earnings management.

Wallace (1980) argues that investors demand audited financial statements because these statements provide information that is useful for their investment decisions; thus external audit is supposed to serve as a monitoring device that reduces managers' incentives to manipulate reported earnings. Therefore, the audit process is valued as a way of improving the quality of financial information; hence it is expected that higher audit quality will be associated with lower earnings management activities by managers.

The role of the auditing process is empirically tested in several studies. For example, Moorland (1995) examines the effect of enforcement actions or sanctions against the auditor by the Securities and Exchange Commission (SEC) on the perceived credibility of audited earnings numbers. The study compares the earnings response coefficient of the clients before and after enforcement action was taken against the auditor and shows a negative market response to the client's accounting information, indicating a decline in its perceived credibility.

Stockholders rely upon the external auditor to provide some assurance that the financial statements of a firm are not misleading. It is crucial that the monitoring provided by external auditors is not impaired and thus the most important factor for the proper discharge their auditing function is their independence. Auditor independence can be compromised when the auditor provides non-audit services to the client. Non-audit fees (NAF) have been used in prior research (Becker *et al*., 1998; Sharma and Sidhu, 2001; Beeler and Hunton, 2002; Quick and Warming-Rasmussen, 2009), and by accounting regulators, as a proxy for the impairment of auditor independence.

Although academic research results are mixed, many accounting regulators clearly believe that NAF have the potential to impair auditor independence. Following the financial scandals involving Enron, WorldCom, Global Crossing and many others, the SEC attributed these to audit failures due to the lack of auditor independence and, in turn, the SEC demands for greater independence for the external auditor. Consequently, the SEC implemented new auditor independence criteria requiring the disclosure of audit and non-audit service fees and banned the provision of certain non-audit services that are considered to be a threat to auditor independence (see SEC Final Rule S7-13-00, 2000).

Nelson *et al*. (2003) surveyed 515 auditors within a big 5 firm on their experience with attempts at earnings management and document that the following attempts are frequently observed: recognising reserves, asset impairment, capitalising or deferring too much or too little, reducing previous accruals such as deferred tax, asset valuation allowance, adjusting depreciation, deferring revenue, bill-and-hold sales, sale-and-lease-back transactions, misestimating percentage-of-completion, income statement classification, avoiding consolidation and many others.

Therefore, earnings management can occur in many forms, including unusual or complex accounting transactions and the use of discretion in accounting estimates. To deal adequately with these types of issues, a professional, high quality and independent auditor is required. Auditing research uses several proxies for audit quality, such as auditor size (DeAngela, 1981), the tenure of auditors (Johnson *et al*., 2002), audit qualified report (Craswell, 1988; Francis and Krishnan, 1999) and industry specialised auditor (Balsam *et al*., 2003 and Krishnan, 2003).

In addition, Choi and Jeter (1992) find that the earnings response coefficient declines significantly after the client receives a qualified audit report. Teoh and Wong (1993) find that the earnings response coefficient of companies audited by big audit firms (as a proxy for high quality audit services) is higher than the earnings response coefficient of companies audited by smaller audit firms, indicating that a high quality audit enhances the reliability and informativeness of accounting earnings.

Recent auditing research has made much use of audits by industry specialists and finds more consistent and reliable results. Solomon *et al*. (1999) argue that industry specialist auditors make more accurate audit judgments and thus conduct higher quality audit work. Similarly, O'Keefe *et al*. (1994) report that specialist auditor's exhibit greater compliance with auditing standards than non-specialist auditors. Dunn and Mayhew (2004) find that clients of industry specialist auditors are ranked higher in terms of disclosure quality by financial analysts. Moreover, Carcello and Nagy (2004) find a negative association between audit firm industry specialisation and SEC enforcement actions.

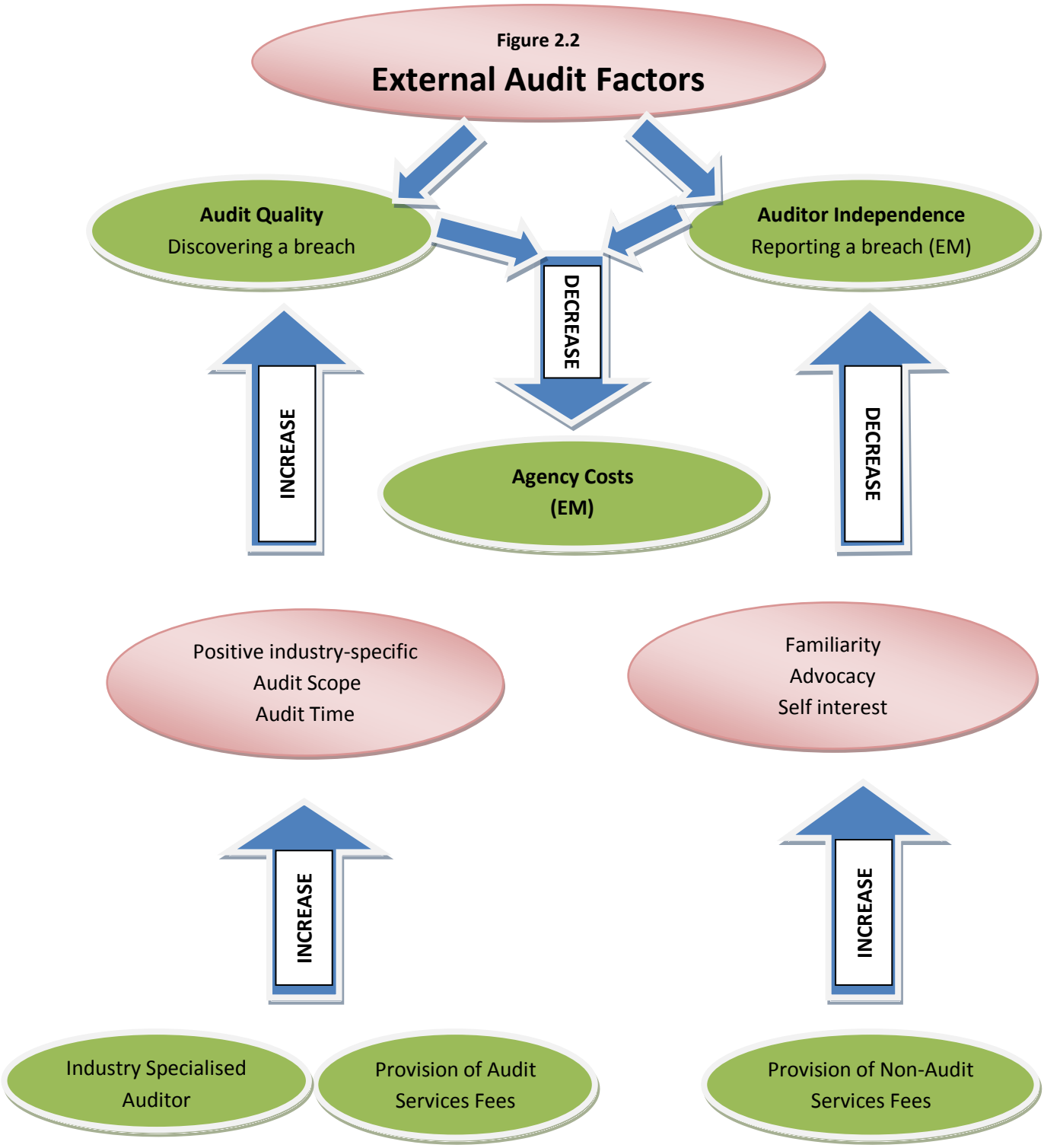
Therefore, in order for the external auditor to provide satisfactory oversight with regard to reducing the incidence of earnings management, it is proposed that two crucial factors may affect the functionality of the external auditor, namely, independence and quality. In this study, external auditor independence will be measured, following the prior literature, using the magnitude of non-audit services fees, while external auditor quality will be measured, according to the prior literature, using both audit fees and industry specialisation. Figure 2.2 illustrates external audit factors that may contribute in constraining earnings management practice.

2.6 Summary

This chapter has provided a general understanding of earnings management. Definitions of earnings management were discussed and motivations for earnings management were explored. There followed a discussion of methods of measuring earnings management with the aim of providing a more comprehensive understanding of the nature of earnings management and of specifying the method of measuring earnings measurement that best serves the purpose of this study.

This study will consider the assumption about the opportunistic nature of earnings management and will employ the most sophisticated earnings management measurement method provided by the literature, namely, performance matched discretionary accruals. A common theme in prior studies is the belief that effective corporate governance and high quality auditing may assist in restraining the incidence of earnings management. The following chapter undertakes a further review of the literature on the association between earnings management and both corporate governance attributes and external audit factors.

Figure 2.2


External Audit Factors
Audit Quality
Discovering a breach
Auditor Independence
Reporting a breach (EM)
DECREASE
INCREASE
DECREASE
Agency Costs
(EM)
Positive industry-specific
Audit Scope
Audit Time
Familiarity
Advocacy
Self interest
INCREASE
INCREASE
Industry Specialised
Auditor
Provision of Audit
Services Fees
Provision of Non-Audit
Services Fees

Chapter Three

Literature Review Chapter

3.1 Introduction

Chapter one identified the problem and the research question of this study. Chapter two defined and discussed its main components, including the nature of earnings management, management's incentives to practice it, how earnings management might be measured and monitoring devices to constrain it. This chapter will review and discuss the prior literature on earnings management, corporate governance attributes and external audit factors. The methodological issues and limitations will be discussed when conflicting results are found. Consequently, this review will be used to identify, for each reviewed attribute, the literature gap and to provide suggestions for bridging it.

Independent variables have been grouped into four categories: board of directors' composition, audit committee effectiveness, ownership structures and external auditor factors. Each category will be discussed in turn and the chapter will conclude with an overall summary of the literature review including a table that summarises the prior literature.

3.2 Board Composition

A substantial body of research exists with respect to corporate governance and it has mainly focused on the role of the composition of the board of directors. The board of directors is considered to be the first defence for shareholders' interest against aggressive management actions. The roles of the board are not only to monitor management actions but also to work with senior management to achieve corporate legal and ethical compliance (BRC, 1999).

Board composition not only refers to its size and the independence of directors but also to the processes for nominating new members and to the remuneration system for board members. The

independence of the chairperson of the board and the commitment of independent directors are also important factors. It is also argued that diversity of gender influences the behaviour of the board.
In relation to these attributes of boards of directors, there is a small amount of literature that exists to support their effectiveness, though no prior study has investigated the direct relationship between these attributes and earnings management. Therefore, it is important to identify whether these proposed attributes of boards of directors have a bearing on the incidence of earnings management. There follows an examination of relevant prior research in order to study the effects of each of these variables.

3.2.1 Board Independence:

Most of the prior studies on the relationship between corporate governance and earnings management document a negative relationship between the presence of outside directors and the occurrence of fraudulent financial statements or discretionary accounting accruals (Peasnell *et al*., 2000a, 2000b; Peasnell *et al*., 2005; Bedard *et al*., 2004; Klein, 2002b; Xie *et al*., 2003; Benkel, *et al*., 2006; Niu, 2006 and Osma, 2008)

Xie *et al*. (2003) examine the effect of various characteristics of boards and audit committees on constraining earnings management. They use discretionary current accruals (using the Jones 1991 model) to measure earnings management for a sample of 282 US firms for the years 1992, 1994 and 1996. They hypothesise that companies with a larger proportion of independent directors will be less likely to engage in earnings management than those whose boards which have a majority of executive directors. Their results support their hypothesis. One remarkable limitation of their study is the use of only two control variables. They only control for firm size, using the log of the market value of equity, and year, using two dummy variables taking the value of 1 if the analysis year is 1992 or 1996. Other studies show that there are many other important control variables, such as managerial ownership, leverage, audit quality and a presence of block holders (e.g., Dechow *et al*., 1996; Peasnell *et al*., 2000a; Klein, 2002b; Bedard *et al*., 2004). The inclusion of more control variables may provide more explicit explanations and reveal meaningful relationships.

Klein (2002b) investigates the effectiveness of characteristics of the board and the composition of the audit committee using data from 1991 to 1993 on earnings manipulation for a sample of 687

large, listed U.S. firms. For earnings management, she used discretionary accruals (modified Jones (1991) cross-sectional model). Unlike, Xie *et al*. (2001), her study controls for the effects of firm size, growth, performance, leverage, managerial ownership and blockholders' ownership.

Klein (2002b) finds a significant negative association between discretionary accruals and the proportion of independent directors on the board, and whether the board has a majority of independent director. This finding is consistent with her finding for audit committees. It is rational to assume that independent directors on the audit committee are independent external directors on the board itself since the audit committee is a sub-committee of the board. If the composition of the board is related to the composition of the audit committee, then the two variables might be highly correlated. Xie *et al*. (2001) avoid this problem of high collinearity by setting two separate models, one for board of director variables and the other for audit committee variables, whereas Klein (2002b) does not provide a correlation matrix between the board and the audit committee variables.

In the UK, Peasnell *et al*. (2000a), examine the relation between earnings management and corporate governance, employing UK data and comparing pre-managed earnings with earnings thresholds (either zero earnings or last year's reported earnings). The results show that firms with a higher proportion of outside directors have less income-increasing accruals when earnings fall below the threshold. However, when earnings exceed the threshold, there is strong evidence of income-decreasing accruals. This evidence is consistent with outside directors being more concerned with constraining income-increasing accruals.

Another interesting UK study carried out by Peasnell *et al*. (2000b), examine whether the association between board composition and earnings management differs between the pre and post-Cadbury periods. They find evidence of accrual management to meet earnings targets in both periods. However, only the post-Cadbury period indicates less income-increasing accrual management to avoid earnings losses or earnings declines when the proportion of non-executive directors is high. These results offer clear evidence of the impact of independent outside directors on constraining earnings management in the UK.

The results of a further UK study by Peasnell *et al.* (2005) indicate that the likelihood of managers making income-increasing abnormal accruals to avoid reporting losses and earnings reductions is negatively related to the proportion of outsiders on the board. They also find that the opportunity to turn a loss into a profit, or to ensure that profit does not decline, is significantly lower for firms with a high proportion of outside board directors.

More recently, Osma (2008) explores different types of earnings manipulation and analyses the effect of independent boards on constraining research and development (R&D) spending manipulation. They use all UK non-financial firms and their sample consisted of 3,438 firm-years, for the period 1990 to 2002. The results indicate that independent directors are capable of identifying and constraining earnings management represented by R&D cuts and can see through this type of manipulation.

In Canada, Park and Shin (2004) investigate the effect of board composition on the level of earnings management in a sample of 539 firm-years. Using the modified Jones model as a proxy for earnings management, they find that independent outside directors *per se* do not reduce discretionary accruals whereas outside directors from financial intermediaries and active institutional shareholders do reduce earnings management. They also find evidence that officers of financial intermediaries on the board and the tenure of outside directors restrain earnings management.

Niu (2006) examine the association between corporate governance mechanisms (including board composition, management shareholding, shareholders' rights and the extent of disclosure of governance practices) and earnings quality, measure in two ways, namely, earnings management and earnings informativeness. Using a sample of Canadian firms in years 2001-2004 and applying Kothari *et al*. (2005) and Larcker and Richardson (2004) as earnings quality measurements, her empirical tests demonstrate that the level of independence of board composition is negatively related to the level of abnormal accruals.

Looking further at these Canadian studies by Park and Shin (2004) and by Niu (2006), the latter's findings are more robust and reliable for two reasons. First, Park and Shin (2004) adopt a basic earnings management model (modified Jones) that, according to Kothari *et al*. (2005), is mis-

specified as it does not control for the effect of a firm's performance on abnormal accruals. Niu (2006) uses a more sophisticated measure of earnings management that controls for performance, using Kothari *et al*. (2005), and robustness, using the Larcker and Richardson (2004) alternative measure of earnings management. Secondly, the first study was conducted before the issue in 2002 of SOX, which included some major corporate governance reforms that enhance the role of independent NEDs in Canadian firms.

SOX has had a great impact on the corporate governance and earnings management relationship. This is supported by the empirical finding of Chang and Sun (2009) that the passage of SOX marks the beginning of the mandatory disclosure of corporate governance information for cross-listed foreign firms (most large Canadian firms are also listed in the US market). Their study reveals a negative association between earnings management and audit-committee independence after SOX, an association that is not found in the pre-SOX period. Their results also show that earnings informativeness is significantly associated with audit-committee independence, the CEO duality and board independence in the post-SOX period.

Benkel, *et al*. (2006) study whether boards of directors and audit committees with a high proportion of independent members are associated with the incidence of earnings management in Australia. They use a sample of 666 firm-year observations for the fiscal years 2001, 2002 and 2003 and apply the DeAngelo (1986) model for their earnings management proxy. They find that boards and audit committees with higher independence are associated with reduced levels of earnings management.

Some recent Asian-based studies also examine the effectiveness of board independence in constraining earnings management behaviour. Abdul Rahman and Ali (2006) investigate the extent of the effectiveness the board of directors, the audit committee and concentrated ownership in constraining earnings management among 97 Malaysian listed firms over the period 2002-2003. Their study reveals that earnings management is positively related to the size of the board of directors but finds an insignificant relationship between either board independence or audit committee independence and earnings management.

Siregar and Utama (2008) investigate the effect of ownership structure, firm size and corporate governance practices on earnings management using Indonesian companies listed on the Jakarta Stock Exchange. They do not find evidence that firms with independent boards engage in informative earnings management. Their sample contains 144 firms and covered the periods 1995–1996 and 1999–2002. They used Jones (1991), modified Jones (1995), Kasznik (1999) and Dechow, *et al*. (2002) as measures of earnings management.

Jaggi *et al*. (2009) investigate whether independent boards provide effective monitoring of earnings management in firms operating in the family ownership environment of Hong Kong. Their final sample consists of 770 firm-year observations and uses Kothari *et al*. (2005) and Francis *et al*. (2005) as proxies for earnings management. They document that independent boards provide effective monitoring of earnings management. However, they find that the monitoring effectiveness of independent boards is moderated in family-controlled firms, which suggests that increasing the proportion of independent directors to strengthen board monitoring is unlikely to be effective in family-controlled firms.

Lo *et al.* (2010) investigate whether good governance structures help constrain management's opportunistic behaviors measured by transfer pricing manipulations in China. Their sample covers 266 listed companies on the Shanghai stock exchange in 2004. They find that firms with independent boards' are less likely to engage in transfer pricing manipulations.

The question that obviously arises is why the results of some of these Asian-based studies conflict with Western results. Their earnings management estimation methods can not be the reason, even though the first study (Abdul Rahman and Ali, 2006) employs a basic earnings management estimation method that uses the modified Jones model. The second and third studies, namely, Siregar and Utama (2008) and Jaggi *et al*. (2009), use more sophisticated measures of earning management that control for performance but find similar results. Thus earnings management estimation methods do not seem to be the reason why their results conflict with those of Western based studies.

More importantly, the first and second studies agreed that board independence is an ineffective monitoring mechanism in reducing earnings management, while the third study find that board independence is effective in the whole sample but not in family controlled firms. The first two studies do not control for family controlled firms, which seems to distinguish the third study. Another possible reason is that the first and second studies have relatively small samples, consisting of 97 firms and 144 firms respectively, while Jaggi *et al*. (2009) use a larger sample of 770 firm-year observations. Thus, sample size may have slightly affected the difference in the results of Jaggi *et al*. (2009) and the first two studies, since it allowed Jaggi *et al*. (2009) to control for family-controlled firms. However, more importantly, most Asian economies are largely dominated by family-controlled firms and this type of firm may have different types of earnings management that is not aggressive but is known as "informative earnings management". This is supported by Siregar and Utama (2008) who find evidence that earnings management in firms with a high family ownership, and which do not belong to business groups, is more efficient than in firms with different ownership structures.

Thus, earnings management in these countries may not be considered bad or agency costs and this would make corporate governance attributes have a weak or positive relationship with earnings management. This association is also documented by Jaggi *et al*. (2009) who states that the monitoring effectiveness of independent boards is moderated in family-controlled firms. Additionally, in family-controlled firms, boards are more vulnerable to dominance by family members and this, together with weak corporate governance regimes in some countries, reduces independent directors effectiveness.

A European study by Osma and Noguer (2007) tests whether board composition is effective in constraining earnings manipulation in a sample of Spanish quoted companies during the period 1999–2001. Their final sample contains 155 firm-year observations, and uses the Jones (1991) model and the marginal model (Peasnell *et al*. 2000b). Whereas in the UK and US independent directors play a significant role, they find that, in Spain, the key practice to constrain earnings management is the appointment of institutional directors. Considering that their study period covers years 1999–2001, which was before the recent corporate governance reforms that enhance the role of NEDs, such as SOX in the USA and The Higgs Report in the UK, and their small sample of 155

firm-year observations, this research may not reveal very reliable results. On the basis of their findings, they conjectured that importing the Anglo-Saxon model of corporate governance is probably not the best solution for code-law countries, such as Spain. They support their argument by quoting the empirical findings of Recalde (2003). Spanish firms have very different governance structures from their American counterparts, including important family and institutional blockholders that effectively supervise managers.

Another European study is conducted by Dimitropoulos and Asteriou (2010) who examine the impact of board independence on earnings management for 97 non-financial firms listed on the Athens Stock Exchange in Greece for the years 2000 through 2004. They use discretionary current accruals (using the modified-Jones model) to measure earnings management and consistent with Anglo-American countries' studies, they find that board independence is significantly and negatively related to their EM proxy.

All in all, the vast majority of previous empirical findings suggest that boards with a high proportion of independent outside directors enhance the integrity of the financial reporting process and provide assurance to shareholders on the quality of reported earnings. However, while studies from the US, UK, Canada and Australia, that is Anglo-American countries with slender differences in their institutional environments, advocate board independence as essential in ensuring financial reporting quality, the Spanish and Asian studies draw attention to the argument that different institutional contexts have different needs in corporate governance and there is no one model that fits all environments.

3.2.2 Board Size

Prior studies provide evidence on the role of board size in enhancing the monitoring of management. Monks and Minow (1995) and Lipton and Lorsch (1992) suggest that larger boards are able to commit more time and effort, and smaller boards are able to commit less time and effort, to overseeing management. Klein (2002a) extends this argument by suggesting that board monitoring is positively associated with larger boards due to their ability to distribute the work load over a greater number of observers. The majority of the previous literature supports this argument, by

finding that larger boards are strongly associated with lower levels of earnings management (Peasnell *et al*., 2000a; Bedard *et al*., 2004; Xie *et al*., 2003; Yu, 2008).

Xie *et al*. (2001) examine the characteristics of the board in constraining earnings management using discretionary current accruals (using the Jones (1991) model) to measure earnings management for a sample of 282 US firms for the years 1992, 1994 and 1996. Their results show that earnings management is less likely to take place in firms with larger boards.

Yu (2008) find that small boards seem more prone to failure to detect earnings management. One interpretation of this effect is that smaller boards may be more likely to be "captured" by management or dominated by blockholders, while larger boards are more capable of monitoring the actions of top management (Zahra and Pearce, 1989).

On the other hand, Alonso *et al*. (2000) argue that large boards exhibit poorer coordination and communication between members, and their results display a significant positive association between larger board size and earnings management. However, the findings of this study were inconsistent and should not be generalised due to several limitations. Firstly, the study covers only one year. Secondly, their study sample uses mixed data from ten different countries without controlling for different external factors, such as accounting standards and regulatory rules and, consequently, their study may be biased.

Abdul Rahman and Ali (2006) investigate the extent of the effectiveness of the board of directors, the audit committee and concentrated ownership in constraining earnings management among 97 Malaysian listed firms over the period 2002-2003. Their study reveals that earnings management is positively related to the size of the board of directors.

Kao and Chen (2004) examine the relationship between board characteristics and earnings management in Taiwan. They find that large board size is related to a higher extent of earnings management. Their sample consists of 1,097 observations and they apply the cross-sectional Jones model to measure earnings management.

Hence, both Abdul Rahman and Ali (2006) and Kao and Chen (2004) find a significant positive relationship between board size and the empirical indicator of earnings management. Both studies use the basic earnings management estimation method (Jones and modified Jones models respectively) that does not control for a firm's performance when estimating accruals. However, this may not be the reason for their conflicting results with the majority of the literature, as Xie *et al*. (2001) also use the Jones model but found a negative relationship between earnings management and board size. Their different results might be due to different types of earnings management adopted in these countries as discussed previously, or to the differences in markets and corporate governance practice that are revealed by these authors.

Considering the earlier discussion of the findings of Asian-based studies that board independence is less effective in constraining earnings management than in Anglo-American countries, and that large boards in some Asian studies show a positive association with earnings management, a further comment can be made. In less developed countries, boards may contain less effective independent directors because some may have been appointed through social connections rather than through ability and competition. In such boards, the advantages of size, namely the presence of more independent directors with valuable experience and diverse backgrounds, will be missing. Boards may be large in size but some outside directors may not be independent or very effective which in turn will demolish the effect of board size on EM.

3.2.3 Board Meetings

Directors on boards that meet frequently are more likely to discharge their duties in accordance with shareholders' interests because more time can be devoted to monitoring issues such as earnings management, conflicts of interest and monitoring management. Conversely, boards that rarely meet may have no time to find out about such complex issues and may perhaps have time only to rubber-stamp management plans.

Though there is extensive prior research on the independence and size of boards of directors, to the best of my knowledge there are few studies of the impact of board meeting frequency on earnings management. Xie *et al*. (2003) argue that a board that meets rarely may only have time for signing-off management plans and listening to presentations; therefore, they may not have the time to focus

on issues such as earnings management. Xie *et al*. (2003), using a sample of 282 firm-year observations, find that earnings management is significantly negatively related to the number of board meetings.

Ebrahim (2007) uses a sample of manufacturing firms for years 1999 and 2000 and expected a negative relation between earnings management and both board and audit committee independence to be mediated by their activity. His results support the expectation that discretionary accruals are much lower when independent audit committees are more active but they do not show any evidence that board activity mediates the relationship between earnings management and board independence.

However, meetings may not always be a characteristic of an effective board of directors. Adams *et al*. (2009) conducts a large survey to investigate outside directors' roles as advisors and monitors of management. He finds that directors who primarily monitor management perceive that they participate less in boardroom discussion than other directors and that the CEO often asks them for advice.

3.2.4 Chairman Independence

The prior literature investigates the duality role of chairman and CEO. Duality occurs when the same person occupies both the CEO and chairman positions on the board. These studies test the chairman's independence and the concentration of power on the board. It is argued in the governance literature that the objectivity and quality of board oversight may suffer if the CEO also chairs the board. Centralisation of power in a company can result in the CEO being able to exercise excessive influence over the board by setting board agendas, managing meetings and controlling the flow of information to its members (Persons, 2006).

However, this study does not investigate the duality role because firms in this study's sample exhibit very high compliance with the corporate governance recommendation that the two roles should be separated. About 98% of firms in this sample separate the positions of chairman and CEO; thus, any test would be statistically unreliable.

This study applies different measures to capture the effect of chairman independence. The UK Corporate Governance Combined Code (2003) specifies the criteria for chairman independence and this study applies these criteria to each firm's chairman to determine his or her independence.

Since this study is not testing the effect of duality on earnings management, a brief discussion of previous studies is used to illustrate that the chairman influences the quality of reported earnings.

Dechow *et al*. (1996) examine 96 U.S. firms subject to earnings manipulation enforcement action by the Securities and Exchange Commission (SEC) and find that firms whose CEO is also chair of the board of directors are more likely to be subjected to accounting enforcement action by SEC for alleged violations of GAAP.

In addition, Klein (2002b) finds that EM is positively related to the CEO holding a position on the board's nominating and compensation committees. Anderson *et al*. (2003) find that the separation between CEO and board chair positions appears to positively influence the information content of accounting earnings.

On the other hand, other empirical studies found no association between CEO duality and EM. Peasnell *et al*., (2000a) examine this association between CEO dominance and earnings management in the UK's largest 1000 listed firms and find no association. Bedard *et al*. (2004) and Xie *et al*. (2003) also find no association.

However, no previous study has investigated the chairman's independence according to the independence criteria set out in the UK Corporate Governance Combined Code (2003). The methodological chapter will look at these independence criteria and the method to be used for measuring this variable.

3.2.5 Gender Diversity of Board

Gender is arguably the most debated diversity issue, not only in terms of board of directors, but also in many other societal situations. Board diversity has been a growing area of corporate governance research in recent years. To date, only three papers address the relationship between the quality of

earnings and gender. However, no study directly investigates the relationship between earnings management and gender diversity.

Clikeman, *et al*. (2001) survey accounting students to determine whether gender or nationality impacts on attitudes toward common techniques used to manage reported earnings. They use responses to hypothetical situations to determine attitudes toward earnings management behaviour and find no significant differences in the attitudes of men and women.

Al-Hayale and Lan (2004) question a number of company managers and external auditors in Jordan to ascertain their views of income increasing and income decreasing earnings management techniques. They find no significant differences in the attitudes of men and women about earnings management. However, the limitation of these two studies is that they did not examine the actual behaviour that is directly related to financial reporting or earnings quality. Krishnan and Parsons (2008), however, extend those studies by examining actual reported financial numbers and comparing the earnings quality in companies with higher percentages of women directors to those with fewer women on their boards. They examine a set of data that covers the period from 1996 to 2000 and use accounting conservatism as a measure for earnings quality. They find that companies with more female senior managers are more profitable and have higher stock returns after initial public offerings than those with fewer females in the management ranks. They use the Catalyst annual censuses of women as corporate officers and top earners for 353 of the Fortune 500 companies. They assert that the improved performance for companies with more women senior executives is not produced through earnings management practice. Instead, they find that earnings quality is positively associated with gender diversity.

It is worth mentioning that the findings of previous studies may not apply in the UK. Kang, *et al*. (2007) argue that board diversity and independence findings may not extend across national boundaries due to different regulatory and economic environments, cultural differences, the size of capital markets and the effectiveness of governance mechanisms. However, this is the first study to examine the relationship between women on boards and earnings management practice as measured by discretionary accruals.

3.2.6 Nomination Committee Independence

Two studies investigate the effect of nomination committee independence on earnings management. The first study is by Klein (2002b), and is based on previous findings by Klein (1998, 2000) that there is a negative association between board independence and whether the CEO sits on the board's nomination committee. Using a dummy variable, she tested if earnings management is positively related to the CEO's membership of this committee using data from 1991 to 1993 on earnings manipulation for a sample of 687 large, listed U.S. firms. She finds no association exist. One of the limitations of this study is that it does not provide a correlation matrix between the board and the audit committee variables; a high correlation is expected when testing various board sub-committees such as nomination committee independence in the same model with audit committee independence.

The second study is conducted by Osma and Noguer (2007) and tests whether the existence of board monitoring committees constrains earnings manipulation for a Spanish sample of quoted companies during the period 1999–2001. Their final sample contains 155 firm-year observations and uses the Jones (1991) model and the marginal model (Peasnell *et al*. 2000a). They find that the independent nomination committee has a positive significant relationship with earnings management, contradicting agency theory predictions. However, they find that the significant positive relationship between board independence and earnings management is moderated by nomination committee independence.

Considering that their study period covered years 1999–2001, which was before the recent corporate governance reforms that enhances the roles of independent NEDs, such as SOX in the USA and the Higgs Report in the UK, and that their sample of 155 firm-year observations is small, their results may not be very reliable. They explain the conflict between their results and their prediction by arguing that the corporate governance system is different in the law code countries like Spain and they assert that the Anglo-Saxon model is probably not the best solution for such countries. Their argument is supported by the empirical findings of Recalde (2003) that Spanish firms have very different governance structures from their American counterparts, with important family and institutional blockholders that effectively supervise managers.

Therefore, this is the first study to examine the effect of nomination committee independence on the incidence of earnings management in the Anglo-Saxon context, using UK data.

3.2.7 Remuneration Committee Independence

To date, there has been little research into the role of remuneration committees in general and only one study that explores the effect of the presence of the CEO in the remuneration committee on the incidence of earnings management. However, no study to date has explored the direct effect of the independent remuneration committee's influence on the incidence of earnings management.

Based on their previous findings (Klein, 1998, 2000) that there is a negative association between board independence and whether the CEO sits on the board's compensation committee, Klein (2002b) tests if earnings management is positively related to the CEO's membership of this committee using a dummy variable. She uses data from 1991 to 1993 on earnings manipulation for a sample of 687 large, listed U.S. firms but one of the limitations of this study is that it did not provide a correlation matrix between the board and the audit committee variables. A high correlation is expected when testing remuneration committee independence in the same model with audit committee independence. She finds a positive relation between the presence of the CEO in the remuneration committee and earnings management. Hence, this is the first study to examine the effect of the independent remuneration committee on the incidence of earnings management.

3.2.8 Non-executive Directors Commitment

One perspective of corporate governance that has not been sufficiently explored is NED commitment. In general, NED's commitment can be measured by their involvement in board meetings. However, as shown in the previous part of this chapter, not many researchers have used this mechanism as it does not fully reflect the diligence of the board. There are many other measures of the board diligence but they cannot be captured by quantitative research methods. Carcello *et al*. (2002) concede that board diligence includes many more factors than mere board meetings including, for instance, preparation before meetings, participation during meetings and post-meeting follow-up. However, the only piece of publicly disclosed information to indicate

board diligence is the number of board meetings. Therefore, this study explores two new measurements of the NED commitment, namely, NEDs' private meetings and their activity fees.

Prior research has extensively investigated independence and size factors for board of directors. This study narrows the focus from the roles of the board in general to the roles of NEDs in particular, in governing the company. To date, there is no single study that has investigated the effect of NEDs' private meetings and NEDs' fees either on earnings management or on financial reporting in general.

3.2.8.1 Non-executive Directors Private Meeting Frequency

This study also examines whether the frequency of NEDs' private meetings, without the presence of executive directors, constrains managerial opportunistic behaviour towards the firm earnings. According to the UK Corporate Governance Combined Code (2003), the responsibilities of NEDs include satisfying themselves on the integrity of financial information and ensuring that financial controls and systems of risk management are robust and defensible.

One important method of NEDs' performance evaluation, according to the UK Code (2003, P.10), is "Individual evaluation should aim to show whether each director continues to contribute effectively and to demonstrate commitment to the role (including commitment of time for board and committee meetings and any other duties)."

NEDs' private meetings are a requirement of the UK Corporate Governance Code (2003, p.5), which says that, "The chairman should hold meetings with the non-executive directors without the executives present". The exercise by NEDs of their responsibilities should have a direct impact on shareholders' perception of the firm's financial reporting integrity and quality, which, in turn, may constrain the inclination of managers to engage in earnings management.

There is no study that has examined the effect of these private meetings; this will be the first study to explore the impact of this activity in general, and on earnings management in particular.

3.2.8.2 Non-executive Directors' Fees

The Hampel Report (1998, p.11) notes that, "NEDs remuneration can be a useful and legitimate way of aligning the directors' interests with those of shareholders". Empirically, on a different but related line, Gerety and Lehn (1997) and Beasley (1996) find a negative association between financial reporting fraud and NEDs' ownership. Bedard *et al*. (2004) also find a negative association between earnings management and NEDs' ownership.

Mallin, (2007) concedes that NEDs should be paid a fee commensurate with the amount of time that they are expected to devote to their role, but she argues that remunerating NEDs with share options is inappropriate as it may give NEDs a rather unhealthy focus on the short term share price of the company.

Additionally, Adams and Ferreira (2004) use a large panel data set on director attendance at board meetings in publicly-listed firms for the period from 1996 to 2003. They provide robust evidence that directors are less likely to have attendance problems when board meeting fees are higher. They suggest that directors appear to do their jobs even for very small financial rewards.

There is no prior study on the effect of NEDs' fees and this research will be the first to examine the effect of NEDs' fees in general and on earnings management in particular.

3.2.9 Summary

Overall, the corporate governance and earnings management literature suggests that board of directors governance mechanisms influence the credibility of financial statements by constraining earnings management. This review of the results of that research indicates that independence, large, diverse and active boards are associated with less earnings management.

Furthermore, the independence of the board's subcommittees (remuneration and nominating committees) is negatively associated with earnings management. However, there are some conflicting results in relation to board composition between Anglo-Saxon countries and the rest of the world. These differences may be due to the methodologies of individual studies and/or to

differences in each country's ownership structure, legal system, corporate governance regulations and culture.

Thus, the composition of the board of directors is paramount to effective corporate governance. There is strong evidence that the quality of oversight generated by this monitoring body benefits when it has more directors, more directors who are independent and committed, and an independent chairman.

3.3 Audit Committee Effectiveness

The purpose of the audit committee is to ensure the accuracy of the financial reports (Buchalter & Yokomoto, 2003). Regulators around the world have acknowledged the important function of audit committees in financial reporting even before financial scandals occurred at the end of the last decade. For instance, in the 1980s the NYSE introduced a requirement for all companies listed on the major American stock exchanges to maintain an audit committee. Its existence is seen as providing an essential monitoring that will protect investor interests and maintain confidence in stock markets.

Parker (1992), as cited in Collier and Gregory, (1996) defined an audit committee as 'A committee appointed by a company as a liaison between the board of directors and the external auditors, this committee normally has a majority of non-executive directors and is expected to view the company's affairs in a detached and dispassionate manner.'

The audit committee is a sub-committee of the board of directors and it provides formal communication between the board, the internal monitoring system and the external auditor; in effect, it acts as an arbiter between management and auditors. Consequently, audit committees should be independent from management so as to be able to conduct effective monitoring, which results in less opportunistic management behaviour such as EM. The quality and credibility of financial reporting can be badly affected when there is low or no audit committee independence.

The UK (2003) Corporate Governance Code emphasised the need for audit committee independence from managers, saying "while all directors have a duty to act in the interests of the company the

audit committee has a particular role, acting independently from the executive, to ensure that the interests of shareholders are properly protected in relation to financial reporting and internal control".

The audit committee has an overseeing and monitoring function of managers' discretion over the accounting policy. An effective audit committee adds to the quality of the audit process at two levels. First, by overseeing the financial reporting process and examining major accounting measurement and choices, and this enables the committee to mitigate earnings management practices. Secondly, by coordinating the internal and external audits and, above all, assuring external auditors' independence and freedom from managerial pressure (McMullen and Raghunanadan, 1996).

Based on the recommendations of regulatory and corporate governance codes such as SOX, the Blue Ribbon Committee Report (BRC) and The UK (2003) Corporate Governance Combined Code, this study examines the vital characteristics of effective audit committees, namely, independence, expertise, meeting frequency and size. The following sections discuss prior studies on these four characteristics.

3.3.1 Audit Committee Size

The number of audit committee members is used as an indication of resources available to this committee. The UK Corporate Governance Combined Code suggests that the minimum number of audit committee members should be three directors.

The findings of prior studies for the effect of audit committee size on earnings management are mixed and inconclusive. Xie *et al*. (2001) used a sample of 282 US firms for the years 1992, 1994 and 1996 and Bedard *et al*. (2004) use a sample of 300 US firms in the year 1996. They apply different methods to capture earnings management incidence, and control for different factors, but both find that there is no significant association between audit committee size and aggressive earnings management.

Baxter and Cotter (2009) investigate whether the size of audit committees is associated with earnings quality for a sample of Australian listed companies in 2001, prior to the introduction of mandatory audit committee requirements in 2003. They use two measures of earnings quality based on the Jones (1991) and Dechow and Dichev (2002) models. Their results indicate no association between audit committee size and earnings quality in either measure.

Abbott *et al*. (2004) examine 41 firms that issued fraudulent reports and 88 firms which restated annual results in the period 1991-1999. They find that audit committee size had no significant impact on financial reporting quality. This study did not use discretionary accruals as a measure for earnings quality. Instead, it used financial restatements for a very small sized sample of 41 firms. However, a more recent study with a larger sample (Lin, *et al*. 2006) finds a negative association between audit committee size and financial restatement.

Lin, at al. (2006) examine the association between certain characteristics of audit committees that were recommended by the BRC in 1999 such as size, independence, financial expertise, activity, and stock ownership. They test year 2000 using 106 publicly-held corporations in the USA. Their dependent variable is reported earnings restatement and their findings suggest a negative association between the audit committees' size and earnings restatement.

Additionally, Abdul Rahman and Ali (2006) investigate the extent of the effectiveness of the audit committee in reducing earnings management among 97 Malaysian listed firms over the period 2002-2003. Their study reveals no significant relationship between audit committee size and earnings management. This is the only study that documents a positive relationship between audit committee size and earnings management. One of many possible reasons is that discussed in section 3.4 above, namely that, because many Malaysian firms are family-controlled, they may have different types of earnings management that is not aggressive but rather "efficient earnings management" as reported by Siregar and Utama (2008). Other plausible explanations for this conflicting result are offered in section 3.4 above include the small sample, or the different economic and stock market background.

In addition to extending the very limited research on the effect of audit committee size, this study is the first to examine the effect of audit committee size on earnings management in the UK.

3.3.2 Audit Committee Meetings

Song and Windram (2004) evaluate the audit committee recommendations of the Cadbury Committee (1992) in the UK and Blue Ribbon Committee (1999) in the US; they examine the effectiveness of UK audit committees in monitoring financial reporting. They find that UK audit committees play a significant role in monitoring the effectiveness of financial reporting. They also find that low frequency of meetings could undermine audit committee effectiveness.

Xie *et al*. (2001) argued that board and audit committee meeting frequency is associated with reduced levels of discretionary current accruals and expected that more active audit committees are more effective monitors. They study a sample of 282 US firms for the years 1992, 1994 and 1996 and find that audit committee meeting frequency is associated with reduced levels of earnings management.

Ebrahim (2007) examines the relation between earnings management and the activity of both the board and the audit committee. Using a sample of US manufacturing companies for two years, 1999 and 2000, he finds that earnings management, as measured by the modified Jones model, is negatively related to both board and audit committee independence and he documents that this relation is stronger when the audit committee is more active.

Abbott *et al*. (2000) examine the relationship between audit committee activity and fraud. They used 78 firms that were subject to SEC sanctions and 78 matched non-fraud firms in the period 1980 to 1996. They measure audit committee effectiveness using a dummy variable that takes the value of one if the audit committee consists entirely of outsiders and meet at least two times per year, and a value of zero otherwise. They find a negative relationship between their audit committee measure and corporation fraud.

Abbott *et al*. (2004) examine 41 firms that issued fraudulent reports and 88 firms which restated annual results in the period 1991-1999. They find audit committees that meet at least four times per year exhibit a significant and negative association with the occurrence of financial reporting restatements.

However, there are some single year studies that did not document any relation between an active audit committee and earnings quality. Beasley, *et al*. (2000) examine the relationship between frequency of audit committee meetings and likelihood of financial statement fraud. They find that the nature of fraud differs by industry. They do not find convincing evidence that companies involved in fraud have fewer audit committee meetings.

Lin *et al*. (2006) examine the effectiveness of certain characteristics of audit committees, as recommended by the BRC in 1999, such as size, independence, financial expertise, activity and stock ownership. They test for year 2000 using 106 publicly-held corporations in the USA. Their dependent variable is reported earnings restatement. Their study evidence suggests no negative association between the frequency of audit committees meetings and earnings restatement.

Baxter and Cotter (2009) investigate whether audit committees are associated with earnings quality for a sample of Australian listed companies in 2001, prior to the introduction of mandatory audit committee requirements in 2003. They use two measures of earnings quality based on the Jones (1991) and Dechow and Dichev (2002) models. Their results indicate that a greater number of audit committee meetings do not seem to reduce either earnings management or to enhance earnings quality measures.

Also in the Australian context, Davidson *et al*. (2005) investigate the role of governance structures in reducing the level of discretionary accruals using a cross-sectional sample of 434 listed Australian firms for the financial year ending in 2000. Their findings do not support the view that active audit committees are associated with a lower likelihood of earnings management.

There are three possible reasons why the four studies just discussed found no relationship between active audit committees and lower earnings management. First, all of these studies look at only one financial year and this makes the statistical tests and generalisation of their findings unreliable. Secondly and more importantly, the last three studies discussed were conducted before 2002, that is, prior to the issue of the Sarbanes–Oxley Act (SOX). Some recent research suggests that SOX has improved the audit committees' effectiveness. Chang and Sun (2009) argue that the passage of

(SOX) marks the beginning of the mandatory disclosure of audit-committee composition and other corporate governance information for cross-listed foreign firms. They posit that the provisions of SOX improve the effectiveness of an independent audit committee and other corporate-governance functions in monitoring the earnings quality of cross-listed foreign firms.

Chang and Sun (2009) use a better specified earnings management measure, based on Kothari *et al*. (2005), and compare 2002 and 2003 financial reports. Their study reveals a negative association between earnings management and audit-committee independence after SOX, an association that was not found in the pre-SOX period. Their results also show that earnings informativeness is significantly and positively associated with audit-committee independence, the CEO duality and board independence in the post-SOX period.

Another plausible explanation for the absence of findings on the effect of the frequency of audit committees meetings is that the number of audit committee meetings may not reflect committee diligence. This is supported by some recent evidence such as that of Turley and Zaman (2007) who use a case study approach, interviewing nine individuals at one U.K. company, including the audit committee chair, internal and external auditors and senior managers. They find that the audit committee's greatest impact comes through informal processes. The audit committee tends not to raise complex, probing questions or views during board or audit committee meetings, but it influences governance outcomes through informal meetings with auditors. Gendron and Bédard (2004), Spira (2002) and Turley and Zaman (2007) also find that a great deal of audit committee activity occurs outside of formal meetings.

3.3.3 Audit Committee Independence

Xie *et al*. (2001) examine the effect of some characteristics of the audit committee on constraining earnings management. They use discretionary current accruals (using the Jones (1991) model) to measure earnings management for a sample of 282 US firms for the years 1992, 1994 and 1996. They study the composition, activity and financial literacy of audit committees. Their results show audit committee independence is not significantly associated with reduced levels of earnings management. This study has remarkable limitations that were discussed in the board independence variable section above.

Klein (2002b) controls for a large set of internal and external factors and investigates the effectiveness of characteristics of the audit committee on earnings manipulation. She measured earnings management using discretionary accruals based on the modified Jones (1995) cross-sectional model, and used a sample of 692 US firms-years with audit committees listed on the S&P 500. She finds a negative association between discretionary accruals and the proportion of independent directors on the audit committee. However, no association between a fully independent audit committee and discretionary accruals was found, while the extent of discretionary accruals is more pronounced for firms with audit committees comprising of less than the majority of independent directors. Thus, Klein (2002b) concludes that it is not necessary to have an audit committee composed entirely of independent directors.

Bedard *et al*. (2004) investigate the effect of audit committee characteristics, namely, expertise, independence and activity, on the extent of earnings management. They use the level of income-increasing and income-decreasing discretionary accruals applying the modified Jones (1995) cross-sectional model for a sample of 300 US firms in the year 1996. Their tests divide the sample into three groups; one with high income-increasing earnings management, one with high income-decreasing earnings management, and one with low levels of earnings management.

Their model has a comprehensive set of control variables that included a firm's characteristics. However, their measures of discretionary accruals may introduce some bias to their study. The results obtained from logistic regression analyses suggest that aggressive earnings management is negatively related to fully independent audit committees. However, no significant association was found between audit committee size or the frequency of its meetings and aggressive earnings management.

Bradbury (2006) examine the relation between board and audit committee characteristics and accounting quality, as measured by discretionary accruals, using a sample of 139 firms from Singapore and 113 firms from Malaysia. He finds audit committee independence is related to higher earnings quality. This relationship exists only when the discretionary accruals are income-

increasing, which suggests that audit committees are effective in the financial reporting process by reducing the level of income-increasing earnings management.

In Australia, Benkel, *et al*. (2006) study whether independent directors on boards and independent audit committees are associated with the incidence of earnings management. They use a sample of 666 firm-year observations for the fiscal years 2001, 2002 and 2003. They find that higher levels of audit committee independence are associated with reduced levels of earnings management.

In the same institutional context, Davidson *et al*. (2005) investigate the role of governance structure in reducing the level of discretionary accruals using a cross-sectional sample of 434 listed Australian firms for the financial year ending in 2000. Their findings support the view that independent audit committees are significantly associated with a lower likelihood of earnings management.

In France, Piot and Janin (2007) examine the SBF 120 Index of French companies between 1999 and 2001, of which approximately half had set up an audit committee by the end of 1998. They find that the presence of an audit committee, as well as its independence, mitigates earnings management.

Although the vast majority of empirical studies show that the independence of the audit committee is negatively associated with the occurrence of EM, some papers produce no results on tests of whether the existence or independence of audit committees reduces the incidence of EM.

In the UK, Peasnell, *et al*. (2005) examine whether the incidence of earnings management by UK listed firms in the fiscal years ending between 1993 to1996 depends on outside board members and the audit committee. They find no evidence that the presence of an audit committee directly affects the extent of income-increasing manipulations to meet or exceed EM thresholds. Nor do audit committees appear to have a direct effect on the degree of downward manipulation, when pre-managed earnings exceed thresholds by a large margin.

However, they do find that the association between income-increasing accruals and the monitoring role of outside directors is more pronounced when there is an audit committee. The conjecture that

Peasnell, *et al*. (2005) offer for their failure to detect the effectiveness of audit committees is that it might be because the great majority of firms in their sample had an audit committee.

Additionally, Osma and Noguer (2007) test whether the existence of an audit committee is effective in constraining earnings manipulation for a Spanish sample of quoted companies during the period 1999–2001. They find that it does not do so.

Baxter and Cotter (2009) investigate whether audit committees are associated with earnings quality for a sample of Australian listed companies in 2001, prior to the introduction of mandatory audit committee requirements in 2003. They use two measures of earnings quality and found that the formation of an audit committee reduces earnings management but has no effect on earnings quality.

The inconclusive findings of these last three studies are not surprising, because the mere existence of an audit committee, without ensuring its independence and competence, cannot guarantee the efficiency of the monitoring process, or its ability to detect and reduce earnings management.

Lin, *et al.* (2006) examine the association between certain characteristics of audit committees that were recommended by the BRC in 1999 such as size, independence, financial expertise, activity, and stock ownership. They tests year for 2000 using 106 publicly-held corporations in the USA. Their dependent variable is the reported earnings restatement. Their study finds no evidence of an association between audit committees independence and earnings restatement. This study does not use discretionary accruals as a measure for earnings quality; it used financial restatements for one year only with a relatively small sized sample of 106 firms. Thus, their findings may not be generalised or compared with the previously discussed evidence due to the major limitations of the study.

Siregar and Utama (2008) investigate the effect of some corporate governance practices on earnings management using Indonesian companies listed on the Jakarta Stock Exchange. Their sample contains 144 firms and covers the periods 1995–1996, and 1999–2002. They used the Jones (1991), modified Jones (1995), Kasznik (1999) and Dechow, *et al*. (2002) models as measures of earnings

management. They find no evidence that firms with audit committees engage in efficient earnings management.

Abdul Rahman and Ali (2006) investigate the extent of the effectiveness of audit committees in constraining earnings management among 97 Malaysian listed firms, over the period 2002-2003. Their study reveals an insignificant relationship between independent audit committees and earnings management.

However, Indonesian and Malaysian business is largely dominated by family-controlled firms, and there is a high possibility that this type of firm may have different types of earnings management that is not aggressive but rather "efficient earnings management". This view is supported by Siregar and Utama (2008) and has been discussed in the board independence variable section.

In the UK, (Peasnell, *et al*., 2005) examine the mere presence of an audit committee. This is the first study to examine the effect of independent audit committees on earnings management in the UK.

3.3.4 Audit Committee Expertise

Song and Windram (2004) evaluate the recommendations of the Cadbury Committee (1992) in the UK and Blue Ribbon Committee (1999) in the US and examine the effectiveness of UK audit committees in monitoring financial reporting. They find that UK audit committees play a significant role in monitoring the quality of financial reporting. They also find that financial literacy is an important determinant of audit committee effectiveness.

Abbott *et al*. (2004) examine 41 firms that issued fraudulent reports and 88 firms that restated annual results in the period 1991-1999. They find a significant positive association between audit committees that lack a member with financial expertise and the occurrence of financial reporting restatements.

Bedard *et al*. (2004) investigate the effect of audit committee characteristics, namely, expertise, independence and activity, on the extent of earnings management. They use the level of income-increasing and income-decreasing discretionary accruals, applying the modified Jones (1995) cross-

sectional model for a sample of 300 US firms in the year 1996. They demonstrate empirically that the presence of at least one member with financial expertise on the audit committee is negatively related to the level of earnings management.

Motivated by the SEC Panel Report's conclusion that audit committee members need a financial sophistication, Xie *et al*. (2003) examine the role of the audit committee in preventing earnings management. They classify audit committee members into six groups and found that board and audit committees that included members with corporate or financial backgrounds are associated with firms that have less earnings management. They do not find a relationship between EM and the presence of an audit committee director who was CEO of another firm, a banker, or a venture capitalist. Additionally, they find a negative relationship between other non-accounting financial experts and earnings management, but no relationship between earnings management and senior business executives of other firms.

Lo, *et al.* (2010) investigate whether good governance structures help constrain management's opportunistic behaviors measured by transfer pricing manipulations in China. Their sample covers 266 listed companies on the Shanghai stock exchange in 2004. They find that audit committees with financial experts are less likely to engage in transfer pricing manipulations.

The previously mentioned studies used different samples, different time periods, different countries and different earnings quality proxies. However, they are unanimous in finding that financial experts on audit committees contribute to higher quality financial reporting.

Additionally, Abdul Rahman, *et al*. (2006) argue that it is important to have competent and experienced directors, particularly in financial aspects, on audit committees since the committee's primary function is to monitor the financial reporting process of an organisation. However, they find insufficient evidence to allow them to accept the negative relationship between earnings management and the competence of the audit committee, as measured by the presence of financial experts. This result may be explained by the type of earnings management they examine and their small sample, which is the 97 top companies for the two years 2002-2003, as illustrated earlier.

Moreover, as the authors acknowledged, the institutional characteristics of Malaysia, where the study was conducted, are different from those of Western countries.

In addition, Lin *et al.* (2006) examine the effectiveness of certain characteristics of audit committees such as size, independence, financial expertise, activity and stock ownership, in line with the recommendations made by the BRC in 1999. They test the year 2000, using 106 publicly-held corporations in the USA. Their dependent variable was reported earnings restatement. Their study evidence suggests no negative association between audit committee expertise and earnings restatements. This study covers a single year and has a small sample, which makes the generalisation of their findings unreliable. Furthermore, as discussed earlier, it was conducted before 2002, prior to introduction of SOX, when, as Chang and Sun (2009) argue, audit committees are less effective. Hence, this is the first study to examine the effect of the audit committees' financial expertise on the incidence of earnings management in the UK.

3.3.5 Summary

Overall, the corporate governance and earnings management literature suggests that audit committee mechanisms influence the credibility of financial statements and prevent aggressive earnings management practices. In particular, the literature indicates that audit committee independence and expertise are effective in constraining earnings management.

There are few studies of the effect of audit committee size and frequency of meetings and their results are inconclusive with little support for the effectiveness of these two factors in constraining earnings management.

Additionally, some Asian-based studies, along with studies that tested for the effect of the mere presence of an audit committee, show inconclusive and conflicting results. Some of the exceptions and conflicting results may be due to the adoption of different dependant variables or the use of different measures of earning management. Prior studies have used different measures of audit quality, including financial restatement, fraud and informativeness. Furthermore, there are some methodological problems with samples, periods and models that were discussed earlier.

3.4 Ownership Structures

The ownership structure of a company could be of critical importance to the effectiveness of oversight mechanisms employed to reduce the likelihood of earnings management practice. It is argued that an effective mechanism to constrain earnings management is the development of an appropriate ownership structure.

There are two streams of thought regarding an effective ownership structure. Firstly, insiders or managers of the firm act also as shareholders if they acquire a considerable portion of the entity's shares, and this is deemed to be useful in reducing agency conflicts and aligning the interests of management and shareholders. Secondly, outsiders who own a significant number of the firm's shares, have more power and more incentive to monitor management activity, particularly the financial reporting process, thereby reducing the likelihood of earnings management.

This section illustrates three types of ownership, internal ownership by managers, external ownership by institutional investors and ownership by blockholders. There follows a discussion of the relevant prior studies on the effectiveness of these ownership structures on reducing earnings management.

3.4.1 Managerial Ownership

The overwhelming majority of empirical studies found a positive association between insiders' ownership and earnings management.

Using Australian data, Koh (2003) examine the association between managerial ownership and Australian firms' aggressive earnings management practice. They test only income-increasing accruals for a sample of 107 firm-year observations from 1993 to 1997. The main finding are a positive association, with a smaller magnitude of income-decreasing accruals for all specifications, consistent with the view that high managerial ownership encourages managerial accruals discretion.

Hsu and Koh (2005), extend Koh (2003) by examining the effect of both short-term and long-term institutional ownership on the extent of earnings management in Australia. The final sample

consists of 201 firm-year observations for years between 1993 and 1997. They test both income-increasing and income-decreasing earnings management and find that managerial ownership is statistically significant for all linear specifications but insignificant for the non-linear models. However, managerial ownership is positively associated with income-decreasing discretionary accruals and negatively associated with income-increasing accruals.

Bergstresser and Philippon (2006) examine the relationship between accruals and managerial ownership for one year, 1996, and find evidence that the more closely a CEO's compensation is tied to the value of stock and options, the more likely it is that discretionary accruals will be used to manipulate profits.

Teshima and Shuto (2008) examine the effect of managerial ownership on earnings management using discretionary accruals. They test a large sample of 18,790 Japanese firm-year observations from 1991 to 2000 and used the Kasznik (1999) model to measure discretionary accruals, which controls for CFO. They find that this relationship is significantly positive within intermediate regions of ownership, which suggests that the entrenchment effect is dominant in these regions. However, they also find that the relationship between managerial ownership and discretionary accruals is significantly negative within low and high regions of ownership, suggesting that the alignment effect is dominant in these regions.

The above studies suggest that monitoring seems to be weaker at higher managerial ownership levels and, therefore, a positive association is documented between the managerial ownership variable and earnings management.

In the UK context, Peasnell, *et al* (2005) study this relationship by hypothesising that the constraining association between earnings management, on the one hand, and an independent board of directors and the existence of an audit committee, on the other hand, will be more pronounced when the level of managerial share ownership is low. They measure the managerial ownership as equal to one when managerial share ownership is less than 5%, whereas the directors' ownership measured by the number of shares beneficially owned by inside directors over total number of shares outstanding. They did not document a direct relationship between earnings management and

managerial ownership. However, they find little support for these conjectures, suggesting that boards continue to have a constraining influence on earnings management, even when shareholders and managers interests are better aligned.

Providing further evidence using UK data, Laux and Laux (2009) investigate the board of directors' equilibrium strategies for setting CEO incentive compensation and overseeing financial reporting and the effects of these on earnings management. Their results show that an increase in CEO equity incentives does not necessarily increase earnings management due to the directors adjusting their oversight effort in response to a change in CEO incentives.

However, there are few studies that argue the high managerial ownership is an effective governance device that results in reducing earnings management. Warfield *et al*. (1995) hypothesise that the level of managerial ownership affects both the informativeness of earnings data and the magnitude of discretionary accounting accrual. They use the three-year period 1988-1990 for 4,778 US firm-year observations. Their results show that the magnitude of accounting accrual adjustments is significantly higher when managerial ownership is low. Specifically, the absolute value of accrual adjustments is twice as high when managerial ownership is under 5 percent than when managerial ownership is above 45 percent.

There are at least two plausible explanations for Warfield *et al*.'s (1995) contradictory result. First, they measure non-discretionary accruals as the five-year average of prior period accruals whereas other studies measure the discretionary accruals using models based on Jones (1991). The difference in the dependent variable measure is significant as they report a mean of absolute discretionary accruals of 26%, which is much higher than that reported in the previously discussed studies, for example 7% in Koh (2003), 0.006% in Hsu and Koh (2005) and 3% in Teshima and Shuto (2008). The second plausible explanation is that Warfield *et al*. (1995) do not control for institutional ownership, which may be a correlated omitted variable in ownership and earnings management research. Rajgopal *et al*. (1999) advocate the importance of controlling for managerial ownership while examining the effects of institutional ownership and vice-versa.

Additionally, Klein (2002b) investigates the effectiveness of characteristics of the board and the composition of the audit committee on earnings manipulation, controlling for CEO ownership among other control variables, for a sample of 687 large, listed U.S. firms from 1991 to 1993. For earnings management, she uses discretionary accruals (the modified Jones (1995) cross-sectional model). She finds inconclusive results that show positive in two out of five models at 0.10 p-value.

This study will attempt to examine the relationship between earnings management and managerial ownership using a different measurement of managerial ownership from previous UK evidence by Peasnell, *et al*. (2005). Following other prior research (e.g. Gul *et al*., 2002; Hutchinson and Gul, 2004), this study will measure managerial ownership as the percentage of total shares held by executive directors divided by the total number of shares.

3.4.2 Blockholders' Ownership

Blockholders' ownership takes various forms, including individual investors, pension funds, mutual funds, corporations, private equity firms, fund managers, banks and trusts. All these, except individual investors, are also known as 'institutional investors' (Cronqvist & Fahlenbrach, 2008).

Zhong *et al*. (2007) consider two competing views when studying the association between blockholders and earnings management. First, consistent with the agency theory perspective, small blockholders can sell their stocks quickly if they are not pleased with the performance of managers, whereas large blockholders find it hard to sell a large block of stock without it having considerable impact on the firm, including lowering its stock price. Thus, large blockholders normally adopt a long-term strategy and, thus, they need to monitor managers to produce more benefits from their equity ownership.

Blockholders have the ability to monitor and 'voice' their concerns and objections as a result of their large voting rights. This, in turn, provides some monitoring over managers, which enables the blockholder to also affect the board of directors' composition (Person, 2006).

Secondly, unlike small shareholders, large blockholders can put pressure on managers to report a favourable financial performance and create another threat of intervention to perceived

underperforming management (Shleifer and Vishny, 1997 and Barclay and Holderness, 1991). Consequently, the existence of large blockholders may pressure firms' managers to engage in income-increasing earnings management to report a favourable financial performance.

Some prior studies support this view. Bethel *et al*. (1998) find that the majority of block trades have a positive association with more management turnovers and Ely and Song (2000) find that blockholders put pressure on managers to take specific actions or they call for the dismissal of the managers whenever the company performs below its potential.

These two competing views of the effect of blockholder ownership are not necessarily mutually exclusive. The dominating factor in both views is the cost and benefit of the earnings management to the blockholders.

Zhong *et al*. (2007) examine the two views on the effect of blockholders on earnings management. They apply their study to 5,475 firm-year observations from 1994 to 2003 using pooled cross-sectional data and they used the modified Jones model to measure the magnitude of earnings management. Their results are consistent with the second view, indicating that blockholder ownership is positively associated with discretionary accruals.

In addition, Klein (2002b) investigates the effectiveness of characteristics of the board and the composition of the audit committee while controlling for the effects of blockholders' ownership. To measure the effect of blockholders on discretionary accruals, she looks at firms whose audit committees included representatives of blockholders with more than 5% of the equity. She finds a negative association between 5% blockholders sitting on audit committees and earnings management.

In addition to the limitations of Klein (2002b) mentioned earlier in the board independence section, another limitation regarding this test is that the measurement of the blockholder in her study includes only blockholders who sit on the audit committee and discriminated the effect of external blockholders. Her result might have been driven by the independence of the directors on the audit committees, regardless of their block ownership.

Dempsey *et al*. (1993) divide their sample of owner-controlled firms into two types: owner-managed firms in which managers own a substantial block of equity, and externally-controlled-firms where outside blockholders own a substantial block of equity. They find that owner-managed firms have less income-increasing earnings management compared to externally-controlled firms, which suggests that insider blockholders have more effective governance attributes to reduce earnings management than outside or external blockholders.

One limitation of Dempsey *et al*. (1993) is the measurement of their dependent variable (earnings management). They use one particular type of accounting choice, namely, extraordinary item reporting, and this may not capture the extent of earnings management as managers usually use a variety of methods to manage earnings and these can be more elusive than extraordinary items.

Furthermore, some other prior studies controlled for blockholders in their tests of corporate governance and earnings management. Dechow *et al*. (1996) investigate firms that were charged by the SEC with earnings overstatements that violate GAAP. They find a negative association between outside blockholders and earnings overstatements that violate GAAP.

In the UK, Peasnell *et al*. (2005), using UK data from 1993 to 1996, examine blockholders using an indicator variable taking the value of one if the firm has an external stockholder owning 10% of the outstanding shares and zero otherwise. They find that no relationship exists between earnings management and blockholders.

Wang (2006) investigate the relationship between the incidence of fraud and the presence of blockholders. Her results show that larger block ownership is associated with a higher likelihood of fraud detection and a propensity to commit fraud. In particular, she finds that a 10% increase in blockholder ownership tended to decrease the probability of fraud by 3.8%. This result suggests that blockholders play an important role in protecting financial reporting quality.

However, large shareholders may expropriate other investors and stakeholders by colluding with management, as documented by Shleifer and Vishny (1997). Claessens *et al*. (2000) argue that

concentrated ownership enables blockholders to use accounting information to their own advantage, for instance through income–decreasing devices in order to diminish the other shareholders' residual claims.

Even if large shareholders monitor managers' behaviour to some extent, there is a possibility that they expropriate minority shareholders by hiding the firm's real performance, this ownership concentration may also badly affect minority shareholders and this, in turn, negatively affects the future value of the firm (Bebchuk, 1994).
Additionally, there is empirical evidence that concentrated ownership (e.g., one ultimate owner) is one of the main causes of Asian companies' poor governance practice and poor accounting disclosure (Claenssens, *et al*., 2000; Fan and Wong, 2001).

Yu (2008) uses large shareholders and the percentage of size of the largest block of stock and tested their association with discretionary accruals. It is found that the earnings management level of a firm with large shareholders is higher than that of a firm without large shareholders by 17% of the sample mean and by 30% of the sample median.

3.4.3 Institutional Ownership

The previous literature illustrates that institutional investors can be considered as sophisticated investors who typically serve a monitoring role in reducing pressures for myopic behaviour. For instance, Bushee (1998) examine whether institutional investors create or reduce incentives for corporate managers to reduce investment in research and development (R&D) to meet short-term earnings goals. The results indicate that managers are less likely to cut R&D to reverse an earnings decline when institutional ownership is high.

It is a global view that institutional investor involvement in corporate governance is a complementary corporate governance mechanism. Ferreira (2007) investigate the role of institutional investors around the world using a comprehensive data set of equity holdings from 27 countries. It was found that firms with higher ownership by foreign and independent institutions (unlike other institutions) have higher firm value, higher operating performance and lower capital expenditures.

Institutional investors were classified into two main groups by recent studies. Firstly, long-term institutional investor, who invest in firms with the intention of holding their ownership stake over a long period. Hence, they have strong incentives to monitor those firms.

Secondly, short-term oriented institutional shareholders, or, as some studies referred to them, myopic, or transient, institutional investors. This group of investors is the dominant type and they focus mainly on current earnings rather than long-term earnings in determining stock prices (Bushee, 2001). They engage less in the management monitoring process and, if they are unhappy with the firm's results, they prefer to sell their stakes rather than to monitor or remove inefficient managers (Coffee, 1991).

Bushee (2001) provides a method for classifying institutional ownership into short-term holdings and long-term holdings based on portfolio turnover and engagement in momentum trading. Recent studies used the level of institutional ownership (Koh, 2003) and the average percent of shares outstanding that are owned by institutional investors (Liu, 2006).

The literature shows that short-term and long-term institutional holdings have opposite effects on earnings management. While long-term institutional holdings have a significant negative effect on the level of earnings management, short-term institutional holdings have a positive effect. Bushee (2001) shows that the characteristics of institutional investors should be considered when examining the relationship between institutional investors and earnings management.

Bushee (2001) examines the differential effects of institutional non-blockholders and active institutional blockholders on earnings management behaviour. As measured by discretionary accruals, he proposes that institutional non-blockholders are more interested in short-run performance than are institutional blockholders and that this interest creates pressure on management to deliver high earnings.

Moreover, Cheng and Reitenga (2009) examine the differential effects of institutional non-blockholders and active institutional blockholders on earnings management measured by

discretionary accruals for S&P 500 firms. They find that active institutional blockholders exercise their monitoring power only when there is pressure to increase earnings, but when there is strong pressure to decrease earnings, evidence for the effect of active institutional blockholders is inconclusive. This may suggest that active institutional blockholders are conservative since they appear to be more likely to limit income-increasing accruals than income-decreasing accruals.

Charitou *et al*. (2007), using a sample of 859 U.S. bankruptcy-filing firms over the period 1986–2004, examine the earnings behaviour of managers during the distressed period. Their results provide evidence that the management of distressed firms with lower (higher) institutional ownership have greater (lesser) tendency to manage earnings downwards.

In Australia, Koh (2003) examines the association between institutional ownership, measured by the level of institutional ownership, and aggressive earnings management in a sample of 107 Australian firms between 1993 and 1997. The modified Jones model is used to measure earnings management for positive discretionary accruals. The main finding is a positive association at lower levels of institutional ownership and a negative association at higher levels of institutional ownership, and this is consistent with the view that monitoring by long-term institutional investors' limits managerial accruals discretion.

Hsu and Koh (2005) extend Koh (2003) by examining the effect of both short-term and long-term institutional ownership on the extent of earnings management in Australia. The final sample consists of 201 firm-year observations of years between 1993 and 1997. Unlike Koh (2003), they test both income-increasing and income-decreasing earnings management and found that managerial ownership is statistically significant for all linear specifications but insignificant for the non-linear models. Their results suggest that transient and long-term institutional investors co-exist and have differential effects on earnings management. Transient institutions are associated with upward accruals management, while long-term institutions constrain this activity.

Osma and Noguer (2007) test whether corporate governance mechanisms are effective in constraining earnings manipulation for a Spanish sample of quoted companies during the period 1999–2001. They mainly use the Jones (1991) model to measure earnings management for 155

firm-year observations. They find that the key constraint on earnings management is institutional directors, unlike the UK and US where independent directors play a significant role.

Cheng and Reitenga (2009) examine the differential effects of institutional non-blockholders and active institutional blockholders on earnings management, measured by discretionary accruals.…They find that active institutional blockholders need to exercise their monitoring power only when there is pressure to increase earnings, but when there is strong pressure to decrease earnings, the evidence regarding the effect of active institutional blockholders is inconclusive. This may suggest that active institutional blockholders are conservative since they appear to be more likely to limit income-increasing accruals than they are to limit income-decreasing earnings management. Cheng and Reitenga (2009) assert that the characteristics of institutional investors should be considered when examining the relationship between institutional investors and earnings management.

Chung *et al* (2002) also investigate the relationship between institutional ownership and earnings management practice. They use the modified Jones model to measure earnings management and apply signed earnings management to test the effect of different possible directions. Their dependant variable is measured as a dummy variable that takes the value of one if the institutional ownership is above the cross sectional sample median and zero otherwise. Their result does not show a significant relationship between institutional investors and earnings management, but this may have been caused by their biased measurement of the institutional ownership.

Peasnell *et al*. (2005), using UK data from 1993 to 1996, examine institutional investors using as a measure the number of shares owned by institutional investors over the total number of shares outstanding. They find that no relationship exists between earnings management and institutional investors.

From the previous studies, it can be seen that institutional shareholders with a high ownership stake can play a significant role in monitoring and mitigating management opportunistic behaviour such as earnings management. This seems not to happen when the institutional ownership stake is low.

Besides using different measures of institutional investors than those used by prior UK studies, this is the first study to investigate the effect of long-term and short-term institutional investors in the UK.

3.4.4 Summary

Overall, the governance and earnings management literature suggests that ownership structures influence the credibility of financial reporting. Regarding managerial ownership, the overwhelming majority of prior studies suggest that low managerial ownership is a good governance attribute, and this runs counter to the proposition of agency theory. However, the review of the results indicates that high institutional ownership is associated with less earnings management in accordance with agency theory.

The review of the prior studies of the association between blockholders' ownership and earnings management shows inconclusive results. Some results suggest that blockholders may behave in aggressive ways and collude with managers against the shareholders' interests, while other researchers argue and some find the opposite, but this may be based on their market and their ownership stake.

3.5 External Audit Factors

External audit is an external governance mechanism that reviews and evaluates client internal controls and audits their financial statements in order to prevent material mis-statements. Auditors of higher quality are less willing to accept doubtful accounting methods and are more likely to report errors and irregularities revealed during the audit work. Thus, the external auditor is considered to have an impact on the efficacy of the firm's monitoring function, and hence the incidence of earnings management.

Stockholders rely upon the external auditor to provide some assurance that the financial statements of a firm are not misleading. It is crucial that the monitoring provided by this procedure is not impaired. Thus, independence is the first and most important factor for external auditors in adequately discharging their auditing function.

Moreover, earnings management can occur in many forms, including unusual or complex accounting transactions and the use of discretion in accounting estimates. To deal adequately with these types of issues, a professional, high quality auditor is required.

Therefore, in order for the external auditor to provide satisfactory oversight with regard to reducing the incidence of earnings management, it is proposed that two crucial factors affect the functionality of the external auditor, namely, independence and quality. In this study, external auditor independence will be measured, following the prior literature, using the magnitude of fees for non-audit services, and the quality of the external auditor will be measured, according to the prior literature, using both audit fees and industry specialisation.

This section of the literature review is organised as follows. The discussion on auditor independence looks at studies that examine auditor independence in general before exploring studies that examine non-audit fees (NAF) and audit fees (AF) in the context of earnings management. Subsequently, the discussion on the industry specialised auditor is organised similarly.

3.5.1 Non-Audit Services Fees and Auditor Independence

Another issue addressed by this study is whether the provision of audit fees (AF) and non-audit fees (NAF) as measures of audit quality and auditor independence impacts on the effectiveness with which the auditors constrain earnings management. In the UK, auditors are allowed to provide non-audit services (NAS) to their clients and these clients are required to disclose the amount of auditor fees in their financial statements.

The Companies Act 1989 (Disclosure of Remuneration for Non-audit Work) 1991 Regulations in the United Kingdom requires UK companies (other than small and medium-sized ones) to disclose in a note to their annual accounts, the remuneration paid to their auditors for non-audit work, separately from the audit fees.

The prior literature suggests that the magnitude of NAF could impair auditor independence as NAS have the following drawbacks that threaten that independence.

The first drawback is the self-interest threat. The auditor may become more reliant on the client when considering future revenues from non-audit services to that client (Becker *et al*., 1998). Thus, auditors may be willing to ignore clients' violations and breaches in order to protect their prospective revenues. Research on this issue showed diverse results. However, some previous studies have documented that auditors are less likely to issue a going-concern modified audit opinion for clients that pay higher NAF (Sharma and Sidhu, 2001; Wines, 1994).

The second drawback is the intimidation threat, represented by the client's ability to choose a different auditor in the future. This threat exists in a normal auditor-auditee relationship but it becomes stronger when the auditor can also lose fees from consulting services (Mayhew and Wilkins, 2003). Several studies (DeAngelo, 1981a; Antle, 1984; Simunic, 1984; Acemoglu and Gietzmann, 1997) have also argued that NAS may reduce independence if auditors expect future fees and there is a threat to replace them if audit reports are not positive.

A third major drawback of NAF is the self-review threat. Auditors are responsible for evaluating internal control and accounting systems. Thus, auditors are actually evaluating their own work, which can affect their independence. Auditors may be unwilling to criticise the work carried out by their consultancy colleagues, because doing so may lead to the audit firm loosing lucrative consultancy services (Bartlett, 1991). Therefore, during the audit, auditors may jeopardise their independence by ignoring errors that may have resulted from advisory services provided by their own firm.

A further drawback of providing NAS is the threat of familiarity. Rouckle (1995) argues that the trust established between auditor and client through NAS may lead to excessive trust that, in turn, leads to less testing of the client's accounting data.

On the other hand, NAS may provide some additional insights into the firm, which may increase audit efficiency. The audit findings are available to the advisory service, and knowledge spillovers can not only enhance efficiency but also the quality of both audit and consulting services (Peel and O'Donnell, 1995). Thus, the total quasi-rents from auditing and consulting services might be higher

than the quasi-rents from auditing services. Therefore, the auditor's independence can be increased if the auditor also provides NAS.

In terms of practical studies, the prior literature on the relationship between the provision of NAS and auditor independence can be differentiated into two research streams: studies on the relationship between NAS and independence in mind and studies on the relationship between NAS and independence in appearance.

The first stream of research argues that, because auditor independence in mind is difficult to observe, previous studies in this area have used proxies for auditor independence, such as NAS. Relevant studies have used different dependent variables to test the effect of non-audit fees, such as qualified or going-concern opinions, earnings management and financial restatement.

The following section will illustrate and discuss some of these key empirical studies, except for those related to earnings management; the latter will be illustrated and discussed extensively in section 3.6.2 below following the general argument of NAF and auditor independence.

In the USA, Craswel *et al*. (2002) investigate whether fee dependence within the audit firms' offices jeopardises auditor independence. They argue that if fee dependence affects auditors' independent judgment, then auditors are less likely to qualify the accounts. Fee dependence is examined at both national and local office levels in audit firms. They focus on audit fee dependence, and control for the effects of non-audit service fee dependence after the 1989 mergers. They measure the independent judgment in auditing by the tendency to issue qualified audit opinions. Their results show that the level of auditor fee dependence does not affect an auditor's tendency to issue qualified audit opinions.

However, Beeler and Hunton (2002) find that audit partners exhibited more biased decision-making in the presence of potential non-audit services, and this creates a perceived lack of auditor independence. They find evidence that the audit fee structure affects the partners' evaluation of evidence and their going-concern judgments.

Beck *et al.* (1988) hypothesises that non-recurring NAS impair audit independence more than recurring NAS but finds no evidence that auditor independence is impaired significantly by NAS. Arrunada (1999a) finds that auditor independence is not impaired by the provision of NAS and, contrarily, it may enhance the auditor's independence if he has a diversified clientele. Similarly, DeFond *et al*. (2002) finds no evidence that the level of non-audit fees affects auditor reporting decisions or their propensity to issue going-concern audit opinions.

The previous author explains in another study, Arrunada (1999b), that an auditor with a large and diversified clientele is collectively dependent on all his clients but more independent of each individual client. He suggested that NAS increase the auditor specific assets, in another words, increase the auditor's size and reputation, which enhances the incentive for the auditor to keep high levels of audit quality as any failure to do so would create large potential losses.

Jenkins and Krawczyk (2002) test a wide range of non audit services in the USA such as actuarial services, legal services and software training and find a positive relationship between accounting professionals and investors' perceptions of auditors' independence and objectivity and additional non-audit fees.

In the UK, Lennox (1999) examines the association between audit qualifications and NAS, using 2,244 UK firm-years over the period 1988 to 1994. He measures NAF as the level of non-audit fees and as the ratio of non-audit fees to total fees. Audit quality is measured by a dummy variable that takes the value of 1 if the auditor discloses a fundamental uncertainty or gives a qualified audit report due to going-concern issues and 0 otherwise. The result shows a positive but insignificant relation between audit qualifications and NAS, which may support the theoretical argument of the possible impairment of the auditor independence by NAS.

Four Australian studies used data from different periods to investigate the association between the incidence of a going-concern opinion decision and NAF. Barkess and Simnett's (1994) sample consists of 371 publically listed companies from 1986 to1990. They find that NAS fees are not related to the audit opinion decision. Craswell (1999) tests audit opinions using 885 Australian

listed companies in 1984, 1,477 in 1987 and 1,079 in 1994. NAS fees are found to be not related to the audit opinion decision.

On the other hand, the other two studies found that NAF affects auditor independence. Wines (1994) used 76 Australian companies over a period of 10 years from 1980 to 1989, and conclude that auditor independence is impaired for clients generating higher levels of NAF. Sharma and Sidhu (2001) used 49 Australian bankrupt companies between 1989 and 1996 and provide evidence of significant positive associations between NAF and the propensity of the auditor to issue a qualified going concern opinion. This result suggests potential independence threats.

In New Zealand, Hay *et al*. (2006) examine the effect of NAF on auditor going concern opinion. They define NAF as the ratio of NAF to AF and audit opinion as firms receiving a qualified or modified report. Their sample consists of 644 New Zealand companies from 1999 to 2001. Their results show no significant association between audit qualification or modification and NAF.

This result is inconsistent with their expectation that New Zealand's small and limited growth market for audit and non-audit services would increase the client pressure on the auditor in order to preserve their client base and fee revenues. A plausible explanation for their results is the low power of their study analysis; only 28 companies, less than 5% of their sample, had a going concern qualification, and thus their test reliability may not be powerful.

The positive impact was also found in an empirical study in New Zealand by Gul (1989) who finds that bankers had higher confidence in auditors who conduct NAS, such as designing and installing financial and cost accounting systems.

The second stream of research has investigated the effect of the provision of NAS on auditor independence in appearance. These studies argue that, since auditor independence is hard to measure, even if independence is not really affected, independence in appearance is affected and the public may perceive that the auditor's independence is impaired, which is more dangerous. These studies are mainly based on surveys and experiments.

External auditors have market pressures and incentives to maintain their integrity and objectivity because they may lose their client base if they lose their reputation. Thus, the economic consequences of reputation loss provide incentives to auditors to sustain and demonstrate a high level of independence. At least, auditors should appear independent to the capital market because independence of mind cannot be observed (Mautz and Sharaf 1961).

Solomon, *et al*. (2005) examine the extent to which the perceived credibility of financial statements is a function of the public's perception of the auditor's independence, using an experimental case on ninety five participants. The results illustrate that participants have less confidence in financial information audited by firms that at the same time provide significant NAS, suggesting that auditors are perceived to be less independent when they also provide NAS.

In Europe, Quick and Warming-Rasmussen (2009) empirically investigate the impact of NAS on investors' perceptions of auditor independence in Germany, considering the recent number of changes to NAS regulations that have occurred in Germany, USA and other countries.

Their findings support the negative impact view, which is in line with most of the previous studies of auditor independence in appearance that were performed in Anglo-American countries, particularly the US. The effects of 19 different services were analysed and they find that shareholders generally perceive a negative effect on auditor's independence if NAS are provided.

In an earlier study, Quick and Warming-Rasmussen (2005) investigate the impact of NAF on perceived auditor independence in Denmark. They find that shareholders, bank loan officers and journalists perceive a negative effect on auditor independence if NAS are provided. Their findings show that the type of NAS influences auditor independence.

Many other studies have documented the same negative association. Firth (1980) finds that there is a perception of auditor independence impairment when the amount of NAF is large in relation to AF. Beck *et al* (1988) also states that the increasing bond between auditors and their clients, due to the provision of NAS, leads to a public perception of impaired auditor independence.

From the above illustrations, it can be observed that the vast majority of empirical studies of auditor independence in mind, as measured by issuing going concerns or qualified reports, failed to find evidence that NAF jeopardise auditor independence, while the vast majority of studies of auditor independence in appearance find that NAF impair the auditor independence.

Francis (2006) asserts that non-findings of a relation between NAF and earnings management may not extrapolate to the U.S. setting due to institutional differences between countries. He reviews the NAS research literature over the past 40 years and concludes that even though there is no clear evidence linking the provision of NAS with audit failures, the literature finds that NAS can adversely affect the appearance of auditor independence, and this may be more than just a "mere perception" problem, because there is also evidence that stock prices are significantly lower for companies that pay their auditors large fees for NAS.

Although academic research findings are mixed, many accounting regulators clearly believe that NAF has the potential to impair auditor independence. Following the financial scandals involving Enron, WorldCom, Global Crossing and others, the SEC attributed these to audit failures due to the lack of auditor independence. Consequently, the SEC implemented new auditor independence criteria requiring the disclosure of audit and non-audit service fees and banned the provision of certain non-audit services that are considered as a threat to auditor independence (see SEC Final Rule S7-13-00, 2000).

3.5.2 Association between Earnings Management and Non Audit Services Fees

The previous discussion shows that NAF can be used as a proxy for a non-independent auditor, and may directly affect the flourishing earnings management practice. Next, the relation between earnings management and NAF will be explored, then the effect of audit fees (AF) on earnings management is discussed.

To begin with USA based studies, Frankel *et al*. (2002) examine the association between NAF and earnings management. Their sample consists of data collected from 3,074 proxy statements filed with the SEC between February 5, 2001 and June 15, 2001. They develop three measurements of NAF. The first is the ratio of NAF to total fees. The second measure disaggregates fees into non-

audit and audit components, both of which are measured as percentile ranks for each client of a specific auditor. The third measure is the percentile rank of total fees for each client of a specific auditor.

Their findings reveal significant positive associations between two of the three proxies of NAF and the magnitude of absolute discretionary accruals and both the magnitude of income-increasing and income-decreasing discretionary accruals. Their results are robust to alternative measures of earnings management.

Ashbaugh *et al*. (2003) challenge the findings of Frankel *et al*. (2002) and conduct the same three sets of empirical tests to explore if Frankel *et al*.'s (2002) results are sensitive to research design choices. They looked at fees for a sample of 3,170 firms from U.S. registrants' 2000 proxy statements. They measured NAF as the ratio of NAF to total fees, and AF as the audit work fee.

Ashbaugh *et al*. (2003) investigates the robustness of Frankel *et al*.'s (2002) discretionary accrual measurement by using Kothari *et al*. (2005), which controls for firm performance. They find no association between NAF ratio and performance-adjusted income-increasing discretionary accruals. Ashbaugh *et al*. (2003) argue that Frankel *et al*.'s earnings management measurement error due to not controlling for firm performance in the estimate of income-increasing discretionary accruals confounds the relationship between discretionary accruals and the fee ratio.

Ashbaugh *et al*. (2003) find two results that are similar to those of Frankel *et al*. (2002). First, they find no association between the fee ratio and the likelihood of firms reporting small earnings increases. Secondly, they find a negative association between total fees and the likelihood of firms reporting small earnings increases. But, unlike Frankel *et al*. (2002), they do not find a significant relationship between either the NAF fee ratio or total fees, and firms meeting analysis' forecasts. Overall, Ashbaugh *et al*.'s (2003) findings do not support Frankel *et al*.'s (2002) conclusion that auditors' independence is impaired as a result of clients purchasing relatively more non-audit services.

Chung and Kallapur (2003) study the association between a client's importance, in terms of fees, and earnings management. They estimate discretionary accruals using the cross-sectional modified Jones model as their measure of earnings management, and measured the client's importance by the ratio of total client fees to audit firm's total revenues, the ratio of non-audit fees from the client to audit firm's total revenues, the ratio of total client fees to revenues of the audit firm office through which the audit was conducted, and the ratio of non-audit fees from the client to revenues of the audit firm office through which the audit was conducted.

They used a sample of 1,871 US firms in the year 2000, and control for industry and determinants of discretionary accruals. They consider both full sample and sample partitions to examine whether client importance is associated with abnormal accruals. They find no significant association between their client importance measures and earnings management. Thus, they find that auditor independence is not impaired by non-audit fees. Their results proved to be robust when they used partitions of the sample based on client incentives to manage earnings, auditor expertise, and management influence on the board of directors.

Larcker and Richardson (2004), aiming to shed light on the prior mixed results on the association between NAF and earnings management, examine the relation between both AF and NAF and discretionary accruals. Earnings management is measured as discretionary accruals using the modified Jones model.

They argue that the previous mixed findings are not surprising because prior research overlooked the important role of corporate governance, along with the external auditor, as a potential monitoring mechanism to mitigate the inherent agency problems in publicly traded corporations.

They suggest that, if auditor independence, measured by the provision of NAF, is studied in isolation from alternative corporate governance mechanisms, it will give a deficient analysis of earnings quality. They conclude that, if a firm has strong governance, then there will be no or a weak relationship between NAS and earnings management.

They use 3,424 firms for years 2000 and 2001 and examine NAF along with some corporate governance variables such as institutional ownership, management ownership and board independence.

Consistent with prior studies, they find mixed results for associations between NAF and discretionary accruals. However, they divide their sample into three clusters based on their corporate governance variables. The cluster that has weak corporate governance levels, which represents approximately 8.5 percent of the total sample, exhibits a statistically significant positive association between NAF and discretionary accruals.

This cluster of firms has lower institutional ownership, higher management ownership, and a lower percentage of independent board members. These results imply that the provision of NAF is a problem only for a small subset of firms that appear to have weak corporate governance resulting from management control. Therefore, it is important to understand the role of corporate governance in either mitigating or exacerbating the relation between payments for NAS and earnings management.

Even though Larcker and Richardson (2004) argue that the previous mixed findings are caused by neglecting the role of corporate governance and suggest that if auditor independence, measured by the provision of non-audit fees, is studied in isolation from alternative corporate governance mechanisms, it will give a deficient analysis of earnings quality, they neglected an extremely important governance variable, namely, audit committee characteristics.

The audit committee is an internal governance system that monitors the credibility of the firm's financial reporting process and oversees external auditor independence. Thus, the audit committee plays a direct role in constraining earnings management, the appointment and dismissal of the external auditor and supervising the level of audit and non-audit fees paid to the auditor. These previous studies did not consider the extent to which the auditor and the audit committee interact and thus jointly affect the quality of financial reporting.

Another attempt to explain the previous conflicting results is offered by Lim and Tan (2007) who document that industry specialist auditors are more likely than non-specialists to be concerned about reputation loss and litigation exposure, and to benefit from knowledge spillovers from the provision of NAS, as well as higher earnings-response increases, with the level of NAS purchased from industry specialist auditors, compared to non-specialist auditors.

They used Ashbaugh *et al*. (2003) to measure discretionary accruals for a sample of 9,501 USA firm-years observations for fiscal years 2000–2001. They find that earnings management is positively and significantly associated with the natural log of non-audit fees, but not with the percentile rank of a particular client's NAF, they also document a negative association between negative EM and NAF.

In the UK context, there are three studies that investigate the impact of auditor independence on earnings management and both find that NAF has a positive relation with earnings management. Gore, *et al*. (2001) investigate the relationship between earnings management and NAF. They use the simple Jones model as a proxy for earnings management. They define NAS as the ratio of NAF to total audit fees. Using a sample of 4,779 UK companies in the period 1992 to 1998, they document a positive association between NAF and earnings management for non-Big 5 clients but not for Big 5 clients.

Antle, *et al*. (2006) study economic bonding in the auditor-client relationship by investigating the association between earnings management and total fees paid to the auditor. They use a sample of 2,294 UK firms from 1994 to 2000 and 1,570 US firms in the year 2000. They define NAF as the ratio of non-audit to audit fees and to total fees. Earnings management is measured using the absolute value of discretionary accruals estimated from the modified Jones model. They report that NAF decrease abnormal accruals in both the US and the UK samples.

Ferguson, *et al.* (2004) using a sample of 610 UK firms for the period 1996-98, they provide empirical evidence on the relation between NAF and three proxies for earnings management: the public criticism of a firm accounting practices, financial statements and the mean absolute value of client discretionary working capital accruals over the sample period. The level of NAS purchase is

measured, alternatively, as the ratio of NAF to total auditor fees, the natural log of NAS fees, and the deciles rank of a particular client's NAS fees given all NAS fees received by the audit firm practice office. In general, they find that all three measures of earnings management are positively and significantly associated with the three measures of NAS purchase.

They offered an explanation for their conflicting results with the previous US studies stating that audit litigation costs in the United Kingdom likely differ significantly from those in the United States and other regimes, and thus auditors' willingness to acquiesce to client pressures across regimes may not be comparable. This argument is also supported by some previous studies such as (Ball, et al. 2000).

In New Zealand, Cahan *et al*. (2008) examine the association between levels of NAF as client importance measures and earnings management. Their sample covers the period 1995 to 2001 and reveals mixed results. They find client importance is associated with earnings management in some regressions and not in others. They also report that significant growth in NAF exhibits less earnings management. However, the latter result is not reliable because the OLS produced a negative adjusted R2, which suggests that the OLS is highly mis-specified.

Additionally, the Cahan *et al*. (2008) study suffers from the problem of small sample size and that may be another plausible explanation for their mixed results and questions about the reliability of their results. Their sample ranges from 31 to 64 for most of their OLS models. Another criticism of Cahan *et al*. (2008) is that they do not control for the effect of foreign firms in their samples. This is an important issue because foreign firms are subject to different disclosure regulations and legal systems. Their sample includes large cross listed foreign companies and their effect on the magnitude of AF is not excluded.

In terms of the relationship between non-audit services and earnings management behavior in developing countries context, using Korean firms, Choi *et al*. (2009) report evidence of a negative relationship between NAF (tax services type) and discretionary accruals, suggesting that auditors' provision of tax services limits aggressive accounting practices. However, there are some reasons that may explain this contradictory result. First, their measure of NAF is only for tax services fees

and not the total amount of NAF. Another possible reason for their result is that Korea has different legal and cultural business environments from western countries. One of the significant differences between Korea and other countries is the high book-tax conformity in Korea as documented by their study authors.

Habib and Islam (2007) study the relationship between non-audit services and earnings management using Bangladesh. Their sample consists of 530 firm-year observations covering the period from 1996 to 1999. They apply both univariate and multivariate regression methodologies to test their hypotheses. They measure EM using Kothari et al. (2005) and used three measures for NAF, namely the natural log of NAF; NAF ratio and natural log of total audit fees. Their results show that no relationship between NAF measures and discretionary accruals is found. Their findings further strengthen the notion that there is a spill-over effect of providing non-audit services. This result of no relationship between EM and auditor independence might be due to the weak corporate governance practice and investor protection in developing countries such as Bangladesh, compared to the US, which in turn will affect this association as argued by Chung and Kallapur (2003).

A similar stream of research investigates the relationship between financial restatements and the provision of NAS. Kinney *et al*. (2004) for instance, examine the relationship between financial restatements and NAF. They define NAS as the ratio of NAF to total fees. The sample includes 617 restating SEC registrants matched with a non-restating firm that has the same SIC code, the same auditor and a similar size measured by total revenue, covering 1995-2000. They do not find any statistically significant association between NAS and restatements.

Bloomfield and Shackman (2008) study the relationship between NAF and the occurrence of financial statement restatements for 250 financial statement restatements announced by public companies from January 1, 2001 to June 30, 2002. They find limited evidence to support the view that firms with higher NAF are more likely to restate earnings; however, their study finds stronger evidence that the level of total fees paid to the audit firm is significant in the predictability of a restatement.

In terms of the relationship between NAF and earnings quality, Srinidhi and Gul (2007), using a sample of 4,282 firm-years for 2000 and 2001, examine the effect of both AF and NAF on accrual quality. They measure accrual quality using a modification of the Dechow and Dichev (2002) model, which estimates the absolute value of the residual from regressions relating current accruals to cash flows, change in revenue, property, plant and equipment (PPE).

Their results show that accrual quality is negatively associated with both expected and unexpected NAF but is positively associated with expected AF. These results suggest that NAF result in economic bonding and consequent loss of audit quality, and AF results in higher accrual quality.

In the Australian context, there is one study that investigates the relationship between NAF and earnings management, as measured by conservatism. Ruddock *et al*. (2006) examine whether the provision of NAS is associated with news-based conservatism. They examine Australian Stock Exchange (ASX) listed firms from 1993 to 2000. They find that higher than expected levels of NAS are not associated with reduced conservatism.

However, Francis (2006) assesses the previous evidence provided by Ruddock *et al*. (2006) and he disagrees with their conclusion that NAS have no adverse effect on audit quality. He asserts that their result may not extrapolate to the U.S. setting due to institutional differences between the two countries.

Overall, the survey of the related literature suggests that the provision of NAF does impair auditor independence and reduce financial reporting quality in countries that have less litigious environment. In the USA, auditors are expected to constrain aggressive earnings management because of the high cost of litigation in the event of audit failure as supported by Nelson (2004) that the incentives to prevent aggressive reporting are provided by the threat of litigation, reputation loss that reduces audit firm's ability to attract clients and maintain higher fees for audit services.

3.5.3 Association between Earnings Management and Audit Fees

In terms of audit fees (AF), Bedard and Johnstone (2004) find that auditors increase effort and billing rates for clients with earnings manipulation risk and they find positive relationships between

billing rates and both earnings manipulation risk and heightened corporate governance risk. These findings suggest that auditors assess situations involving both an aggressive earnings management and inadequate corporate governance and that there is a relationship between those assessments and auditors' fees.

They offered some examples. Auditors could use more specific tests to detect certain entries that could be manipulated to manage earnings in a particular industry. They could also increase the extent of testing in particular areas that are highly susceptible to earnings manipulation, such as end of financial period transactions.

Srinidhi *et al*. (2007) argue that the auditing market is more regulated than the non-audit services market as the audit of listed firms is mandatory, whereas non-audit services are not. They assert that AF is more likely to reflect auditing efforts, which in turn produces better accrual quality.

Gul *et al*. (2003) examine the linkages between discretionary accruals and AF. Using 648 Australian firms, OLS regression results show that there is a positive association between earnings management and AF.

Abbott *et al*. (2006) examine the association between AF and earnings management, hypothesising that, due to asymmetric litigation effects, AF decrease (increase) with a client's risk of income-decreasing (increasing) earnings management. They use a sample of 429 public, non-regulated, Big 5 audited companies for the year 2000. They find that downward earnings management risk, (negative discretionary accruals) is associated with lower AF. Positive discretionary accruals are associated with higher AF.

Stanley and DeZoort (2007) investigate the relation between audit firm independence and financial restatements. AF is used as one of the measures of auditor independence. Using matched-sample logistic regression and 382 companies with and without financial restatements during 2000–2004, the results indicate that AF is negatively related to the likelihood of restatement. This result is consistent with concerns about reduced audit quality due to a lack of client-specific knowledge and low AF on new audit engagements.

3.5.4 Industry Specialised Auditor and Audit Quality

DeAngelo (1981) defines audit quality as the multiple probability of the auditor discovering, observing and reporting financial statement errors. However, audit quality is hard to measure. Audit research has applied a variety of proxies to measure audit quality. For example, DeAngelo (1981) argues that larger auditors are more independent and, therefore, provide a higher quality of audit. Large audit firms have more concern to protect their reputations and more resources, which enable them to perform better auditing services, compared to small audit firms (Palmrose, 1988; Menon and Williams, 1991)

Empirically, some researchers, such as Becker *et al*. (1998), Francis *et al*. (1999) and Chia *et al*. (2007), provide evidence for the use of auditor size as a proxy for audit quality. However, Johnson *et al*. (2002) adopt the tenure of auditors with their clients as a proxy for audit quality as auditors who have served their clients for a longer time would know their clients' accounting systems and internal controls better. Their results show that short audit tenure of two or three years is associated with lower quality financial reporting.

This long-term relationship between auditor and client may actually create aggregated awareness that helps auditors to limit earnings management behaviours and other irregularities in financial reporting processes. Mansi *et al*., (2004) suggest that, under the current system of voluntary auditor rotation, audit quality does not appear to deteriorate with longer auditor tenure.

Nevertheless, Ghosh and Moon (2005) argue that the tenure of auditors may have a negative impact on audit quality, as auditors who have served their clients for a longer time may surrender their independence to maintain close relationships with their clients.

Other researchers apply the number of audit qualified reports as an indicator of audit quality; some researchers call this measure the unclean auditor opinion. Thus, higher-quality auditors will usually issue more unclean opinions than lower-quality auditors (Craswell, 1988; Francis and Krishnan, 1999).

The first wave of research described above views the large audit firms (Big 4) as a homogenous group. The second wave of research relaxes this assumption and has started to examine potential differences in audit quality within the Big 4 group of accounting firms.

Francis (2004) argues that there is a need for audit quality measure development as the Big 4 market shares continues to expand globally and now exceeds 90% for publicly listed companies in the US markets. From a statistical point of view, this means that studies that adopt Big 4 audit firms as a measure of audit quality have a weakness in their research designs because there is a very low variance in this variable as most observations are audited by Big 4 auditors.

Francis (2004) empirically observes that industry market shares are not evenly distributed among the large audit firms. He uses the new US audit fee disclosures for 2000–2001 and computes industry fee leaders for 63 non-financial industries based on two-digit SIC industry codes. On average, he finds that industry leaders have 50% of the industry fees, while the second-ranked firms have about 20%.

Recently, a more sophisticated measure of audit quality was introduced in the literature, namely, the industry specialised auditor. It is argued that each of the Big 4 auditors is specialised in certain industries and thus more familiar and effective in conducting higher quality audit work for firms in that particular industry.

Solomon *et al*. (1999) argue that industry specialist auditors have a deeper knowledge than non-specialist auditors due to greater experience in the industry, and this enables experts to make more accurate audit judgments and thus to conduct higher quality audit work. They find that specialist auditors have more accurate non-error frequency knowledge than non-specialists.

Owhoso *et al*. (2002) show that industry experienced auditors are better able to detect errors within their industry specialisation than outside that industry. Similarly, Maletta and Wright (1996) observe fundamental differences in error characteristics and methods of detection across industries. In addition, specialised auditors are more likely to invest more in staff recruitment and training,

information technology and audit technologies than non-specialist auditors (Dopuch and Simunic, 1982).

Additionally, O'Keefe *et al*. (1994) report that specialist auditors exhibit greater compliance with auditing standards than non-specialist auditors. Dunn and Mayhew (2004) find that clients of industry-specialist audit firms are ranked higher in terms of disclosure quality by financial analysts. Carcello and Nagy (2004) find a negative association between audit firm industry specialisation and SEC enforcement actions.

Green (2008) compares specialised auditors in manufacturing industry with non-specialised auditors on conducting some audit processes. Both groups conducted analytical procedures tasks within the same industry. The results show that differences were noticeable in later stages; specialised auditors had a more focused and efficient information search as they were more able to detect the correct causes of problems during the task, and identified the correct these causes more often.

3.5.5 Association between Earnings Management and Industry Specialised Auditor

Krishnan (2003), using a sample of 4,422 firms audited by Big 6 auditors from 1989 to 1998, examines the association between auditor industry expertise and a client's level of earnings management. It is found that clients of non-specialised auditors report absolute discretionary accruals that are higher than the discretionary accruals reported by clients of specialised auditors.

Balsam *et al*. (2003) compare the absolute level of discretionary accruals and earnings response coefficients of firms audited by industry specialists with those of firms not audited by industry specialists. They investigate years between 1991 and 1999 for more than 50,000 firm-year observations and used the modified Jones model to measure discretionary accruals. They use multiple proxies for industry specialist auditors and find that clients of these specialist auditors have lower earnings management than clients of non-specialist auditors.

Chen *et al.* (2006) investigate whether the empirical results that Big 5 auditors and industry specialists constrain earnings management in the USA can be extended to Taiwan given the significantly different audit market and legal environments. They measured EM applying the

modified Jones model and use 2324 observations during 1998–2002. They document that industry specialist auditors constrain income-increasing earnings management.

Stanley and DeZoort (2007) investigate the relation between audit firm tenure and financial restatements. The effects of short tenure, expertise and independence are measured using audit firm industry specialisation and audit fees as proxies whereas the effects of long tenure independence are measured using non-audit fees as a proxy. They use a matched-sample logistic regression for 382 companies with and without financial restatements for years 2000 to 2004. Their results indicate that industry specialised auditor and audit fees are negatively related to the likelihood of restatement. This result is consistent with concerns about reduced audit quality due to a lack of client-specific knowledge and low audit fees on new audit engagements.

Bloomfield and Shackman (2008) study the relationship between audit firm industry specialisation and the occurrence of financial statement restatements in 250 public companies that announced financial statement restatements from January 1, 2001 to June 30, 2002. They find strong and conclusive evidence of a negative association between the occurrence of financial statement restatements and industry specialised auditor.

Lim and Tan (2007) use Ashbaugh *et al*. (2003) to measure discretionary accruals for a sample of 9,501 USA firm-years observations, for fiscal years 2000–2001. They document that industry specialist auditors are more likely than non-specialists to be concerned about reputation losses and litigation exposure, and to benefit from knowledge spillovers from the provision of non-audit services. They also find that earnings-response increases with the level of non-audit fees purchased from industry specialist auditors compared to those purchased from non-specialist auditors.

Gul *et al*. (2009) examine whether industry specialised auditors and low balling affect the association between auditor tenure and earnings quality. They apply their study on the large number of US firm-year observations, from 1993 to 2004. They find that the association between shorter auditor tenure and lower earnings quality is weaker for firms audited by industry specialists compared to non-specialists. They use Ball and Shivakumar's (2006) measure of earnings management and some other models for robustness checks.

From the demonstration of prior studies in this section of external audit factors, several gaps can be identified. First, in the UK, the literature on audit quality and earnings management tends to focus on audit-quality differences between Big 4 and non-Big 4 auditors and implicitly treats the Big 4 auditors as a homogeneous group in terms of audit quality. This study will take the literature on the relationship between earnings management and audit quality in the UK a step forward by using auditor industry specialisation as a proxy for audit quality, and test its relationship with earnings management for the first time. Secondly, this is the first study that controls for the effect of the audit committee when testing the relationship between NAF, industry specialist auditor with earnings management.

Larcker and Richardson (2004) argue that the previous mixed findings are caused by neglecting the role of corporate governance and suggest that if auditor independence, measured by the provision of non-audit fees, is studied in isolation to alternative corporate governance mechanisms; it will give a deficient analysis of earnings quality. However, they neglect an extremely important governance variable, namely, audit committee characteristics.

The audit committee oversees the external auditor's independence and it is involved in the appointment and dismissal of the external auditor. It also supervises the level of audit and non-audit fees paid to the external auditor. Prior studies have not considered the extent to which the auditor and the audit committee interact and thus jointly affect the quality of financial reporting. Therefore, this study extends Larcker and Richardson (2004) by incorporating audit committee characteristics and auditor independence in the same model.

3.5.6 Summary

In section 3.6, the literature on external auditor factors was divided into three sections. The first part looked at previous studies on the relationship between NAF and auditor independence impairment in both mind and appearance. The first stream of these studies, which examines the relationship between non-audit fees and going concern reports, qualified reports and restatements, show mixed and inconclusive results. The second stream of studies that examine auditor independence in appearance show more convincing results, namely, that auditors may lose their independence in

appearance when providing NAS. However, regulators, such as the SEC, still believe that the provision of non-audit services by the firm that performs the external audit is a major threat to external auditor independence.

The second part reviewed the association between NAF and earnings management, the majority of the evidence from the US suggests that NAF do not impair auditor independence. Auditor independence studies in Australia reveals inconclusive results, though there are no direct studies that have tested the relationship between NAF and discretionary accruals. The majority of the evidence in the UK suggests NAF do impair the auditor's independence.

One plausible explanation of these conflicting results is the measurement errors inherent in discretionary accruals compared to other measures of financial quality (Dechow *et al*., 1995; Defond *at al.,* 2002; Kinney and Libby, 2002). Another possible explanation is the variance level of litigation risk that auditor faces in different environment as discussed earlier.

The methodological choice differences in the prior studies may have also contributed to these inconclusive results. For example, they use various measurements of NAF, control for different internal and external factors and condition their studies to various factors such as specialised auditor, strong corporate governance and audit turner.

Finally, in terms of the industry specialised auditor, most of the prior research documented the positive impact of a specialised auditor on audit quality. There is scarcity of prior research on the link between specialised auditor and earnings management, and most studies in this regard showed a negative association.

3.6 Overall Summary

This chapter's review of prior studies shows that research in financial reporting quality is still at a developmental stage. This is because of the limitations of those studies and their conflicting results.

Four categories of corporate governance were covered in this review, namely, board of directors' composition, ownership structure, audit committee effectiveness and external auditor factors.

Research of particular relevance to each of the four categories was thoroughly reviewed, limitations were discussed and, when possible, links were established.

The review of studies on board composition and audit committee effectiveness shows different results for Anglo-Saxon and other countries, especially those where family-controlled firms flourish. The review of ownership structures shows that the UK exhibits different institutional and blockholder investors' behaviour compared to other countries. In terms of external auditor factors, NAF studies reveals inconclusive results that have various complex explanations, whereas specialised auditor studies are consistent in their findings that specialised auditors are in general effective in enhancing audit quality and earnings quality.

There are two notable limitations in the prior studies in general. Most look at either a single year period or a small sample number. This may weaken the power of the statistical analysis and make the results less reliable and less universal.

The deficiencies in the literature were identified at the end of the discussion of each variable and this was followed by suggestions to bridge these gaps. This chapter does not aim to provide justifications for the effect of all independent variables, but it critically discusses related prior literature for all variables. However, the methodological chapter will present the theoretical argument followed by the empirical justifications for the independent variables and demonstrate how they could be related to earnings management after discussing the suitable theoretical approach in the next chapter.

The following table summarises the key studies in the previous literature that investigates the relationship between corporate governance, external audit factors and earnings management.

Figure 3.1: Summary of Key Studies Investigating the Relationship between Corporate Governance, External Auditor and Earnings Management

Study	Dependent Variable(s)	Independent Variable(s)	Sample	Analysis Technique	Main Findings
Gore *et al.* (2001)	Discretionary accruals measured by Jones (1991) model.	Auditor fees.	A sample of 4,778 UK companies between 1992 and 1998.	OLS regression.	Positive relation between non-audit fees and earnings management for non-Big 5 clients but not for Big 5 clients.
Xie *et al.* (2001)	Discretionary accruals measured by modified Jones (1995).	Board composition, audit committee and the executive committee.	A sample of 282 firms from the S&P 500 index for years 1992, 1994 and 1996.	Simple and multiple OLS regression.	Earnings management negatively related to board i ndependence and boards with corporate directors. Audit committees comprising members with some corporate or investment banking background is associated with a reduced level of earnings management. No association between lower levels of earnings management and the meeting frequency of boards and audit committees
Klein (2002b)	Discretionary accruals measured by modified Jones (1995).	Board composition and audit committee.	A sample of 692 US publicly listed firms with annual shareholder meetings between July 1, 1991 and June 30, 1993.	OLS regression.	No association between audit committee comprised solely of independent directors and abnormal accruals but a negative association between audit committees comprising less than a majority of independent directors and abnormal accruals and percent of outside directors on the board, and a board comprised less than a majority of outside directors.
Frankel *et al.* (2002)	Discretionary accruals measured by Jones (1991) model.	Auditor fees.	A sample of 3,074 US proxy statements between February 5, 2001 and June 15, 2001.	OLS regression	Positive association between non-audit fees and reporting a small earnings surprise, for absolute discretionary accruals, and positive and negative discretionary accruals. Negative association between audit fees and earnings management.
Krishnan (2003)	Discretionary accruals measured by Jones (1991), and modified Jones models.	Auditor industry expertise.	A sample of 4,422 US firms audited by Big 6 auditors from 1989 to 1998.	Means differences and OLS regression.	Clients of non-specialist auditors report absolute discretionary accruals that are higher than the discretionary accruals reported by clients of specialist auditors.

Study	Dependent Variable	Independent Variable	Sample	Analysis Technique	Main Findings
Chung and Kallpur (2003)	Discretionary accruals measured by modified Jones (1995) model.	Auditor fees.	A sample of 1,874 firms that filed proxy statements between Feb 5, 2001 and June 30, 2001.	OLS regression.	No significant association between client importance ratios and discretionary accruals either for the full sample or sample partitions.
Ashbaugh *et al.* (2003)	Discretionary accruals measured by portfolio performance, adjusted discretionary current accruals (PADCA) and ROA in estimated discretionary current accruals (REDCA)	Auditor fees	A sample of 3,170 US firms during November and December 2001.	OLS regression.	No relation between positive discretionary accruals and any of the auditor fee metrics.
Park and Shin (2004)	Discretionary accruals measured by modified Jones (1995) model	Board composition.	A sample of 539 firm-years in Canada.	OLS regressions.	Outside directors, as a whole, do not reduce discretionary accruals while directors from financial intermediaries and active institutional shareholders reduce earnings management. Also evidence that officers of financial intermediaries on the board and the tenure of outside directors restrain earnings management.
Larcker and Richardson (2004)	Discretionary accruals measured by variation of modified Jones (1995) model.	Auditor fees and corporate governance.	A sample of 3,424 firms from S&P for the years 2000 and 2001.	OLS regression and means difference tests.	Mixed evidence of associations between non-audit fees and discretionary accruals. Three distinct clusters of firms made where one cluster exhibits a statistically significant positive association between non-audit fees and abnormal accruals.
Kao and Chen (2004)	Discretionary accruals measured by Jones (1995) model.	Board composition.	A sample of 1,097 observations using Taiwanese firms.	OLS regression	Large board size is related to higher earnings management and independent board is negatively associated with earnings management practice.
Bedard *et al.* (2004)	Discretionary accruals measured by modified Jones (1995) model.	Board composition and audit committee.	A sample of 300 US firms in 1996.	Logistic regression	Upwards earnings management is negatively related with fully independent audit committee, independent boards, audit committee financial expertise and a clear mandate of the audit committee. Larger boards, stock ownership by non-executive directors and experience as a board member reduce downwards earnings management.

Study	Dependent Variable	Independent Variable	Sample	Analysis Technique	Main Findings
Ferguson et al. (2004)	Three proxies for earnings management: the public criticism of a firm accounting practices, financial statements and the mean absolute value of client discretionary working capital accruals measured by the modified Jones model.	Auditor fees.	A sample of 610 UK firms for the period 1996-98.	Logistic and OLS regressions	In general, they find that all three measures of earnings management are positively and significantly associated with the three measures of NAS purchase.
Davidson *et al.* (2005)	Discretionary accruals measured by the modified-Jones (1995) model and small profits or small changes in earnings (Holland and Ramsay, 2003).	Board composition and audit committee.	A sample of 434 listed Australian firms for the financial year ending in 2000.	OLS regression	A majority of non-executive directors on the board and on the audit committee are significantly associated with a lower likelihood of earnings management. However, voluntary establishment of an internal audit function and the choice of auditor are not significantly helpful in constraining earnings management.
Niu (2006).	Equality measured in two ways: earnings management and earnings informativeness, using Kothari *et al.* (2005), and Larcker and Richardson (2004) models.	Board composition, management shareholding, and shareholders' rights)	A sample of 519 firm-year observations from S&P/TSX composite index as of 1 September 2002, 2003, 2004 and 2005.	OLS regression analysis.	The magnitude of discretionary accruals is negatively associated with board independence and the extent of alignment of management compensation with interests of shareholders and the strength of shareholder rights.
Abdul Rahman and Ali (2006)	Discretionary working capital accruals measured by the cross-sectional modified version of Jones (1995) model.	Board composition, audit committee and concentrated ownership	A sample of 97 Malaysia listed firms over the period 2002-2003.	OLS regression	Earnings management is positively related to the size of the board of directors but there is insignificant relationship between independence of board and audit committee with earnings management.
Benkel *et al*. (2006)	Discretionary accruals measured by DeAngelo (1986)	Independent board and audit committee	A sample of 666 Australia firm-year observations, over the fiscal years 2001, 2002 and 2003.	OLS regression.	A higher independence of board and audit committee is associated with reduced levels of earnings management. Interestingly, they only find these relationships exist in large firms but not small firms.

Study	Dependent Variable	Independent Variable	Sample	Analysis Technique	Main Findings
Abbott *et al.* (2006)	Discretionary accruals measured by Dechow *et al.* (1995) and Kothari *et al.* (2005) models.	Audit fees.	A sample of 429 public, non-regulated, Big 5 audited companies, for the year 2000.	OLS regression.	Downward earnings management risk, (negative discretionary accruals) is associated with lower audit fees. Positive discretionary accruals are associated with higher audit fees.
Antle *et al.* (2006).	Discretionary accruals measured by modified Jones (1995) model.	Auditor fees.	A sample of 2,294 UK firms from 1994 to 2000 and 1,570 US firms in the year 2000.	OLS regression	Positive association between non-audit services fees and discretionary accruals.
Piot and Janin (2007)	Discretionary current accruals measured by Jeter and Shivakumar, (1999) and Jones (1991) models.	Auditor reputation and tenure, audit committee existence and independence.	A sample of 120 French (SBF) Index companies over three consecutive financial years: 1999, 2000 and 2001.	Means differences and time-series adjusted regressions	The presence of an audit committee but not the committee's independence constrains upward earnings management; the presence of a large audit firm makes no difference to earnings management activities.
Shen and Chih (2007)	Earnings smoothing	Index with corporate governance rankings measured by firm-level governance	A sample of 495 firms across 25 emerging markets and 18 sectors in 9 Asian countries from April 2001 and February 2002.	Multiple regression	Firms with good corporate governance tend to have less earnings management.
Chen et al. (2006)	Discretionary accruals measured by modified Jones model.	Specialised Auditor	Asample of 2324 observations during 1998–2002.	Means differences and OLS	They document that industry specialist auditors constrain income-increasing earnings management
Osma and Noguer (2007)	Discretionary accruals measured by Jones (1991) model, the Jones cash-flow model And the marginal model (Peasnell *et al.* 2000b)	Board composition and the existence of board monitoring committees.	A sample of 155 Spanish quoted companies during the period 1999–2001.	OLS regression.	In Spain, the key practice to constrain earnings management is institutional directors, unlike UK and US, where independent directors play a significant role. The existence of an independent audit committee does not affect earnings management, whereas the existence and composition of a nomination committee affects the role of independent directors in constraining earnings management.

Study	Dependent Variable	Independent Variable	Sample	Analysis Technique	Main Findings
Zhong *et al.* (2007)	Discretionary accruals measured by modified Jones (1995) model	Ownership structures.	A sample of 5,475 US firm-year observations from 1994 to 2003.	Pooled cross-sectional, time-series OLS regressions	Outside blockholder ownership is positively associated with discretionary accruals. Blockholders are not effective monitors of income-increasing earnings management that is generally within the bounds of GAAP.
Liu and Lu (2007)	Discretionary accruals measured by modified Jones (1995) model.	Corporate governance index.	A sample of 5,977 firm-year observations using China's listed companies.	OLS regression.	Firms with higher corporate governance levels have lower levels of earnings management. Good corporate governance mitigates agency conflicts between the largest shareholders and the minority shareholders.
Ebrahim (2007)	Discretionary accruals measured by the modified Jones (1995) model	The activity of both the board and audit committee.	A sample of US manufacturing companies in 2000.	t-tests and OLS regression .	Earnings management is negatively related to both board and audit committee independence; this relation is stronger when the audit committee is more active. However, this result is not valid for the board activity.
Srinidhi and Gul (2007)	Discretionary accruals measured by Dechow and Dichev (2002) and Francis *et al.* (2005).	Auditor fees.	A sample of 4,282 firm-years for 2000 and 2001, from AMEX, NYSE, and NASDAQ.	OLS regression	Accrual quality is negatively associated with both expected and unexpected non-audit fees but is positively associated with expected audit fees. Whereas non-audit fees result in economic bonding and consequent loss of audit quality, audit fees result in higher accrual quality.
Choi (2009)	Discretionary accruals measured by Kothari *et al.* (2005).	Auditor fees.	A sample of 374 firms listed on the Korea Stock Exchange (KSE) for the fiscal years from 2000 to 2006.	OLS regression	NAF (tax services type) are negatively associated with earnings management of tax expense when audit committees are more effective. However, this association turns to a positive relation if the audit committee is less effective.
Habib and Islam (2007)	Discretionary accruals measured by Kothari *et al.* (2005)	Auditor fees.	A sample of 530 firm-year observations, from 1996 to 1999 in Bangladesh.	Univariate and OLS regression	No relationship between NAF measures and discretionary accruals is found.

Study	Dependent Variable	Independent Variable	Sample	Analysis Technique	Main Findings
Lim and Tan (2007)	Discretionary accruals measured by Ashbaugh *et al.* (2003).	Industry specialist auditor.	A sample of 9,501 US firm-years for fiscal years 2000–2001.	OLS regression	Industry specialist auditors are more likely than non-specialists to be concerned about reputation loss and litigation exposure.
Jiang *et al*. (2008)	Discretionary accruals measured by Kothari *et al.* (2005)	A Government-Score developed by Brown & Caylor (2006)	A sample of 4,311 US observations, covering 2002, 2003 and 2004.	Univariate analysis and OLS regression	In the post-Sarbanes–Oxley period, higher levels of corporate governance are associated with lower absolute discretionary accruals.
Cahan *et al.* (2008)	Discretionary accruals measured by the modified Jones (1995) model.	Auditor fees.	A sample of 237 New Zealand firms during the period 1995-2001.	OLS regression	No relationship between growth in NAF and earnings management. Interaction of the non-audit fee time-period measures and client importance is positive and significantly associated to discretionary accruals.
Siregar and Utama (2008)	Discretionary accruals measured by Jones (1991), Dechow *et al.* (1995); Kasznik (1999) and Dechow *et al.* (2002) models.	Ownership structure, firm size, Board composition and audit committee.	A sample of 144 firms 1995–1996, and 1999–2002.	Multiple regressions.	Earnings management in firms with high family ownership that do not belong to business groups is more competent than in firms with different ownership structures. However, no evidence those larger firms, firms audited by the Big 4, firms with independent boards, and firms with audit committees engage in efficient earnings management.
Zhao and Chen (2008)	Absolute value of unexpected accruals and fraud.	Staggered boards, as a type of weak governance.	A sample of 4,292 firm-year observations from 1995 to 2001 using US firms.	Mean differences and logistic regression.	Staggered boards are associated with lower likelihoods of committing fraud and smaller magnitudes of absolute unexpected accruals.
Osma (2008)	Research and development (R&D) spending manipulation. Dependent equals 1 if R&D spending is lower than previous period spending; 0 otherwise.	Independent boards of directors	A sample of 3,438 UK firm-years that spans 29 different industries.	OLS regressions.	Independent directors are capable of identifying and constraining earnings management represented by R&D cuts, and of detecting this type of manipulation.

Study	Dependent Variable	Independent Variable	Sample	Analysis Technique	Main Findings
Chang and Sun (2009)	Earnings informativeness and earnings management, using the modified Teoh and Wong (1993) model for earnings informativeness and Kothari *et al*. (2005) model to measure earnings management.	Audit committee and board composition.	A sample of 106 firms in 2002–2003, a post-SOX sample of 93 firms and 89 pre-SOX firms.	Means differences and OLS regression.	A negative association between EM and audit-committee independence after SOX, an association that is not found in the pre-SOX period. Earnings informativeness is significantly associated with audit-committee independence, the CEO duality and board independence in the post-SOX period, but no significant association between earnings informativeness and audit-committee independence in the pre-SOX period.
Gul *et al.* (2009)	Discretionary accruals measured by Ball and Shivakumar (2006) and Francis *et al.* (2005), Jones model and the performance-adjusted model (e.g. Ashbaugh *et al.*, 2003; Kothari *et al.*, 2005).	Industry specialisation auditor and tenure auditor.	A sample of 32,777 US firm-year observations from 1993 to 2004.	OLS regression.	The association between shorter auditor tenure and lower earnings quality is weaker for firms audited by industry specialists compared to those audited by non-specialists.
Jaggi *et al*. (2009)	Discretionary accruals measured by Kothari *et al*. (2005) and Francis *et al.* (2005)	Independent boards.	A sample of 770 firm-year observations from 1998 to 2000 using Hong Kong companies.	OLS regression	Independent boards provide effective monitoring of EM. However, this is moderated in family-controlled firms, which suggests that an increase in the proportion of independent directors to strengthen board monitoring is unlikely to be effective in family-controlled firms.
Baxter and Cotter (2009)	Two measures of earnings quality based on discretionary accruals measured by Jones (1991) and Dechow and Dichev (2002) models.	Board composition and audit committee.	A sample of 309 Australian firms in 2001.	Pooled OLS regression	The formation of an audit committee reduces EM but audit committee accounting expertise is not associated with EM. No association found between other audit committee characteristics, such as independence, size and meetings, and both earnings quality measures.
Dimitropoulos and Asteriou (2010)	Discretionary current accruals (using the modified-Jones model)	Board size and independence.	97 non-financial firms listed on Athens Stock Exchange in Greece from 2000 to 2004.	OLS regression.	They find that board independence is significantly and negatively related to their EM proxy.
Lo *et al*. (2010)	Transfer pricing manipulations	Board and audit committee characteristics.	266 Chinese listed companies on the Shanghai stock exchange in 2004.	Means differences and OLS regression	They find that firms with independent boards' and audit committees with a financial expert are less likely to engage in transfer pricing manipulations.

Chapter Four

Theoretical Framework

4.1 Introduction

The previous chapters outline the subject matter of this research, namely, earnings management and its association with corporate governance and external audit factors. The research question has been specified, the relevant research literature has been explored and gaps in that research have been identified. Before developing the research hypotheses and testing them, it is necessary to develop a theoretical base for this research. That is the aim of this chapter.

Though there is no agreed theoretical base for research on corporate governance (Parum, 2005), a review of the literature indicates that four main theoretical frameworks have been used to explain and analyse the association between earnings management and both corporate governance and external audit factors. These are agency theory, stakeholder theory, stewardship theory and institutional theory. This chapter reviews these four theories and their applicability to the research question of this study.

4.2 Agency Theory

The agency theory is based on the relationship between the principal (owners) and the agent (managers). The separation of ownership from management in modern corporations provides the context for the function of the agency theory. Modern organisations have widely dispersed ownership, in the form of shareholders, who are not normally involved in the management of their companies.

In these instances an agent is appointed to manage the daily operations of the company. This distinction between ownership and control creates the potential for conflicts of interests between agents and principals, which result in costs associated with resolving these conflicts (Jensen & Meckling, 1976 and Eisenhardt, 1989).

The most important basis of agency theory is that the managers are usually motivated by their own personal gains and work to exploit their own personal interests rather than considering shareholders' interests and maximising shareholder value. For example, managers may be attracted to buying lavish offices, company cars and other extravagant items, since the cost is borne by the owners.

Thus, the key predicament indicated by agency theory is ensuring that managers pursue the interests of shareholders and not only their own interests. Eisenhardt (1989, p. 58) explains that agency problems commence when "The goals of the principal and agent conflict and it is difficult and costly for the principal to verify what the agent is actually doing". Controversy occurs because principals are unable to monitor the performance of agents (Jensen & Meckling 1976).

This pursuit of self interest increases costs to the firm, which could include the costs of the formation of contracts, loss due to decisions being taken by the agents and the costs of observing and controlling the actions of the agents. Leuz *et al*. (2003) assert that the effects of such behaviour ultimately reflect in the company earnings.

Consequently, management have an incentive to manage the company's reported earnings in order to meet or beat earnings targets and, thus, to receive any bonuses that may be tied to the company's earnings (performance-related pay). This creates an information asymmetry in that managers can exercise the discretion they have on accruals, which in turn reduces the relevance and reliability of reported earnings, and the whole financial statements. Davidson *et al*. (2004) argues that when management provides inaccurate financial reporting information, it introduces earnings management as a type of agency cost.

As a result, managers cannot be fully trusted. Therefore, strict monitoring of managers by the principals or their representatives, such as the firm's board, is seen as fundamental to protecting shareholders' interest from being compromised when managers maximise their self interest at the expense of the organisation's profitability.

In order to effectively limit agency costs caused by the separation of ownership and control, Fama and Jensen (1983b, p.309) propose that firms need a system that can separate decision management

from decision control. This would limit agency costs by controlling the power of management and ensuring the proper consideration of shareholders' interests.

Corporate governance may be seen as such a system. Fama (1980), Fama and Jensen (1983b), Williamson (1988) and Shilefer and Vishny (1986) contend that managerial opportunistic behaviour is constrained by corporate governance mechanisms, and note that there are both internal and external corporate governance mechanisms that can minimise such agency costs. McKnight and Weir, (2009) also confirms that corporate governance mechanisms reduce agency costs.

The agency theory provides a basis for the governance of firms through various internal and external mechanisms (Weir *et al*., 2002; Roberts *et al*., 2005). The governance mechanisms are designed to ensure agent-principal interest alignment, protect shareholder interests and thus minimise agency costs (Davis *et al*., 1997, p.23).

Demsetz and Lehn (1985) support this argument as they consider that the primary objective of corporate governance is not to directly improve corporate performance, but to resolve agency problems by watching management's behaviour and inspecting the financial reporting process. Therefore, corporate governance mechanisms are able to mitigate agency costs and protect shareholders interests by monitoring management activities and, thus, align the interests of management with those of shareholders.

Some studies (e.g, Davis et. al., 1997) suggest alternative governance structures using control and monitoring devices, such as audits and performance evaluations, to minimise agency costs and protect shareholder interests. Some effective governance structures to control managers include independent boards of directors predominantly made up of NEDs who have no personal relationship with management, an independent chairperson of the board who is not an executive manager of the company, and a chief executive officer and executive directors whose personal interests are aligned with shareholders through stock ownership (Donaldson 1990, p.376).

Among the governance mechanisms that have been studied are the board of directors and an ownership structure to align the interests of the agent and the principal. The literature on the board,

as a governance team, reports on issues such as board size, board independence, and the separation of CEO and chair positions with the aim of improving the effectiveness of the overall oversight (Dalton *et al*., 1998; Coles & Hesterly, 2000; Daily *et al*., 2003).

Most of researchers that examine the association between earnings management and corporate governance relied upon agency theory to examine the role of boards and related governance mechanisms in affecting a firm's management involvement in earnings management (Xie *et al*., 2003; Kao and Chen, 2004; Davidson *et al*, 2005; Benkel *et al*, 2006 and Goodwin *et al*, 2009).

The use of an audit committee can be considered an important part of the decision control system for internal monitoring by boards of directors (Fama, 1980 and Fama & Jensen, 1983). Requirements for monitoring suggest the need for external audits (Anderson *et al*., 1993), audit committees (Bradbury, 2006) and the use of NEDs (Fama, 1980 and Anderson *et al*., 1993).

Fama (1980) believes that governance mechanisms are more economical in controlling management than alternatives such as takeovers. Studies on management ownership concentrate on ways in which managers are compensated so that their interests are aligned with those of shareholders (Davis *et al*., 1997; Tosi, *et al.* 2003).

The role of corporate governance here is to protect the shareholders by monitoring managers through various corporate governance mechanisms. This is supported by the view of the UK corporate governance codes.

Thus, corporate governance, through mechanisms such as audit committees, boards of directors and external auditors, enables shareholders to closely monitor the actions of managers. Weak monitoring of managers may encourage them to pursue their own interests by activities such as managing earnings but effective corporate monitoring through good corporate governance can reduce this type of deceptive behaviour.

In addition, principals hire external auditors who, as agents under contract, are expected to be independent of the agents who manage their company. The role of the external auditor is to reduce

agency costs by cutting information asymmetry in financial reporting (Poit, 2001). Agency theory recognises external auditing as the most important monitoring mechanism because it controls conflicts of interest and diminishes agency costs. Watts and Zimmerman (1983) confirm that high quality external auditing will undermine the opportunistic behaviour cost (agency cost) introduced by management.

These monitors act on behalf of the shareholders. As a result, high audit quality involving a specialised independent auditor can decrease opportunities for managers to pursue self-interest at the expense of owners and, thus, principals obtain more favourable returns.

Taking agency theory into consideration, earnings management may be indicative of an agency problem. As a consequence, enhancing corporate governance should result in a reduction in the practice of earnings management. Given these agency assumptions, independent variables will be identified with the aim of detecting associations between corporate governance attributes and earnings management.

4.3 Stewardship Theory

Unlike agency theory, stewardship theory, based on a psychological and sociological approach, maintains that the interests of corporate executives (as stewards) are aligned with those of the organisation and its owners (Albrecht *et al*., 2004). The stewardship theorists focus on structures that empower and facilitate rather than monitor and control. They reject the highly individualistic model of agency theory that promotes a suspicious "policeman's" attitude, assumes that principals and agents have different interests and sees agents as essentially self-serving and self-centred. Thus they also reject the view that principals need to invigilate the opportunistic agents by monitoring them and apply sanctions or incentives as means of control.

Stewardship theory takes an opposite perspective. It suggests that the agents are trustworthy and good stewards of the resources entrusted to them, which makes monitoring unnecessary (Donaldson, 1990; Donaldson & Davis, 1994; Davis *et al*., 1997). Since managers are not opportunistic and act in the best interests of owners, they should also be given autonomy based on trust, and this reduces the cost of monitoring and controlling their behaviour.

Donaldson and Davis (1994, p. 51) observe, "organisational role-holders are conceived as being motivated by the need to achieve and exercise responsibility and authority, to gain satisfaction through effectively performing essentially challenging work, and to gain recognition from peers and bosses".

According to stewardship theory, the behaviour of the steward is collective, because the steward seeks to achieve the organisation's goals (e.g. profitability). This, in turn, benefits the principals through the positive effects of profits on dividends and share prices (Davis *et al*. 1997). Managers believe that their interests are aligned with those of the firm's owners.

Thus, stewardship theory maintains that the optimum governance structures are those that enable effective coordination in the enterprise. The stewardship perspective sees directors, as well as managers, as stewards of the firm and thus likely to increase the shareholders' wealth. Davis *et al*. (1997) posit that stewards gain greater satisfaction from achieving organisational goals than through pursuit of their own goals. Davis *et al*. (1997) argue that the attainment of organisational success also satisfies the personal needs of the stewards. Thus, the stewardship theory considers that managers' decisions are also influenced by non-financial motives, such as need for achievement and recognition, the intrinsic satisfaction of successful performance, and respect for authority and the work ethic.

According to this theory, corporate governance should be based on the view that the directors, on behalf of stakeholders, want to be good stewards of the corporate assets, and there is no conflict of interest or opportunistic behaviour at the expense of stakeholders. They work diligently to gain high levels of corporate profit and shareholder return. These concepts have been documented in organisational studies, such as in Muth and Donaldson (1998).

Stewardship theory considers the board of directors as an instrument of assistance to a steward CEO rather than a controlling mechanism (Albrecht *et al*., 2004). It also considers that management is less likely to practise earnings management. However, the problem lies in the extent to which the management aspires to attain a good corporate performance.

Davis *et al*. (1997) suggest that managers identify with the firm and that leads to a personal relationship with success or failure of the firm. Daily *et al*. (2003) argue that managers and directors also want to protect their reputations as expert decision makers. As a result, managers run the firm in a manner that amplifies financial performance, including shareholder returns, as the firms' performance impacts directly on perception of their individual performance.

From the stewardship theory perspective, a firm's superior performance is linked to the board having a majority of executive directors since these directors understand the business better than outside directors, and can therefore make superior decisions (Donaldson, 1990; Donaldson & Davis, 1994).

Stewardship theory also argues that the effective control held by professional managers empowers them to maximise the firm's performance and corporate profits. Consequently, boards that are dominated by executive directors are preferable because of their expertise and knowledge, access to essential information and commitment to the firm. Several studies support the view that managers make superior decisions because they possess more and better information (e.g. Boyd, 1995).

Similarly, CEO duality, that is, the same person holding the position of chair and chief executive, is viewed favourably since, it is argued, it leads to better performance by the firm due to clear and unified leadership (Donaldson & Davis, 1994; Davis, *et al*., 1997). Bhagat and Black (1999) find that firms with boards consisting of a higher number of outside directors (representing the agency theory perspective) perform worse than firms with fewer outside directors.

Thus, some support exists for the stewardship perspective both theoretically (e.g., Davis *et al*., 1997) and empirically (Bhagat & Black, 1999). In summary, it argues that the responsibility and authority of executive managers provides a better focus on company objectives, leadership and implementation of operational decisions, leading to more effective corporate governance and corporation. Donaldson & Davis (1994) contend that the stewardship theory remains the theoretical foundation for better regulation and legislation in corporate governance. Muth and Donaldson (1998) compare the predictions of agency theory with those of stewardship theory and find support for the latter as a good model of reality.

However, there is strong opposition to the stewardship theory by those who argue that NEDs dominated boards should play a major role in corporations (Donaldson & Davis, 1994). The benefits of independent boards, are promoted by influential and powerful sources, such as the Council of Institutional Investors in the US and the UK, corporate governance codes and existing professional directors (Mace M, L,. 2004).

Furthermore, managers will not always act to align their own interests with those of shareholders. Choo and Tan (2007) argue that, psychologically, a board's lack of non executive directors may encourage managers to commit fraud. Albrecht *et al*. (2004) also highlight the fact that the relationship between principals and their agents based on the stewardship perspective may provide opportunities for management to commit fraud.

4.4 Stakeholder Theory

Mary Parker Follett put forward the idea of stakeholder theory around 60 years ago (Schilling, 2000) and it re-emerged in the 1980's. Freeman (1984, p.52 quoted in Schilling 2000, p.225) defines a stakeholder as "any group or individual who can influence or is influenced by the achievement of the organisation's objectives". The term 'stakeholder' may, therefore, include a large group of participants, in fact anyone who has a direct or indirect 'stake' in the business (Carroll 1993, p.22 quoted in Schilling 2000, p.225).

Direct stakeholders are shareholders, employees, investors, customers and suppliers whose interests are aligned with the company. An example of an indirect stakeholder is the government, which is indirectly affected by the company's function (Kiel and Nicholson 2003b).

Clarke. (2004) defines 'stakeholder theory' as follows. "Stakeholder theory defines organisations as multilateral agreements between the enterprise and its multiple stakeholders. The relationship between the company and its internal stakeholders (such as employees, managers, owners) is framed by formal and informal rules developed through the history of the relationship. While management may receive finance from shareholders, they depend upon employees to accomplish the productive

purpose of the company. External stakeholders (customers, suppliers, and the community) are equally important, and also constrained by formal and informal rules that business must respect".

Stakeholder theory advocates that "companies and society are interdependent and therefore the corporation serves a broader social purpose than its responsibilities to shareholders" (Kiel & Nicholson, 2003a, p. 31).

Additionally, Donaldson and Preston (1995, p. 85) recognise stakeholders as "persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity". Wheeler and Sillanpaa (1997) identify the stakeholders that should be taken into consideration in the governance structure as investors (including banks), managers, employees, customers, business partners (e.g. suppliers and subsidiaries), local communities, civil society (including regulators and pressure groups) and the natural environment.

Mitchell *et al.* (1997) argue that stakeholders can be identified by one, two or all three of the attributes of: (1) power to influence the firm, (2) the legitimacy of relationship with the firm, and (3) the urgency of their claim on the firm. This typology allows managers to pay attention and react to various types of stakeholder. Stakeholder refers to each group or individual whose goals are recognised by a firm or who exert influence on the firm's goal attainment. These include employees, clients, suppliers, banks, local government and agencies, political parties and community organisations.

This theory gained strength during the 1970s and 1980s to reflect the fear at a societal level that large national corporations were becoming too powerful and beyond accountability to stakeholders, including governments. With time, the topic raised increased social awareness and the tendency toward triple bottom line reporting.

Stakeholder theory is an extension of the agency view, which expects board of directors to look after the interests of shareholders. However, this narrow focus on shareholders has been expanded to take into account the interests of many different stakeholder groups, including interest groups related to

social, environmental and ethical considerations (Freeman, 1984; Donaldson & Preston, 1995; Freeman *et al*., 2004).

However, Margaret Blair (1995) argues that, although stakeholder theory has more substantial historical roots, practical applications, and intellectual appeal than agency theory, it has had much less impact on thinking and policy-making about corporate governance.

The common criticisms for stakeholder theory is that how to align the stakeholders conflicting interests since the difficulties result from how to administers different stakeholders with various needs demands and if it does, can it treat all stakeholders equally? (Hoque, 2006). Moreover, Etzioni (1998) suggests that it is not practical for all stakeholders to be effectively represented in corporate governance recommendations as this may undermine the welfare of company.

Additionally, Sternberg (1997) concludes that stakeholders approach is incompatible with organizations fundamental objectives and it is not fundamentally able to provide better corporate governance. He convinces that balancing stakeholder interests is not likely to be successful objective and its accountability is unjustified.

On the other hand, the linkage between stakeholder theory and earnings management is explained by Prior *et al* (2006) who document that management may manipulate earnings in order to improve their private interests via expense of shareholders and additionally the rest of stakeholders.

Stakeholders' theory views corporate governance and external audit as effective monitoring systems that could protect all stakeholders' interests. Mattingly *et al* (2009) also find good corporate governance is associated with high earnings quality and low earnings management in origination's stakeholder management. However, in terms of audit quality, Baker *et al* (2002) suggest that the role of external auditor as monitoring mechanisms is not only directed for shareholders' benefit, but also for the interests of all stakeholders.

This change in the role of the boards has led to the development of stakeholder theory. Stakeholder theory can be seen as not necessarily supporting the view that amplifying shareholder value is the

top priority for a business. Managers may legitimately follow objectives that do not increase shareholder wealth.

Furthermore, managers' incentives may not necessarily be associated with the interests of shareholders. However, managers who claim that this is due to consideration of other stakeholders' objectives "may be using stakeholder claims as a smokescreen to obscure what is really their inability to deliver value to the company's shareholders" (Healy 2003, p.24).

Freeman *et al.* (2004) suggest that managers should try to produce as much value as possible for stakeholders by resolving conflicts among them so that stakeholders do not exit the deal. Management theories tend to centre on the firm's profit motives and responsibility to its shareholders (Schilling, 2000). Stakeholder theory proposes that the emphasis of managerial activity should be on the growth and maintenance of all stakeholder relationships, not just that with shareholders.

There is extensive debate among scholars on whether to take a broad or narrow view of a firm's stakeholders. Freeman (1984, p. 46) proposes a broad view covering a large number of entities, and includes almost all types of stakeholders, including 'involuntary' stakeholders who may be placed at risk as a consequence of a firm's activities. The concept of risk gives stakeholders a rightful claim on a firm's decision making, regardless of their power to influence the firm.

Stakeholder theory recognises that many groups have links with the firm and are affected by a firm's decision making. Freeman *et al.* (2004) suggest that the idea of value creation and trade is closely connected to the idea of creating value for shareholders. They observe, "Business is about putting together a deal so that suppliers, customers, employees, communities, managers, and shareholders all win continuously over time."

Freeman *et al*. (2004) centre on two core questions: 'what is the purpose of the firm?' and 'what responsibility does management have to stakeholders?' They posit that both questions are consistent and managers must build up relationships, inspire their stakeholders, and create communities where

everyone strives to do their best to deliver the value that the firm promises. Thus the stakeholder theory is believed to better equip managers to articulate and foster the shared purposes of their firm.

Carver and Oliver (2002) examine stakeholder perspectives of non-financial outcomes. For example, while shareholders usually define value in financial terms, other stakeholders may seek benefits "such as the satisfaction of pioneering a particular breakthrough, supporting a particular kind of corporate behaviour, or, where the owner is also the operator, working in a particular way". It means that some stakeholders have 'non-equity stakes' and management should create and maintain all stakeholder relationships, and not just the one with shareholders.

This suggests the need to extend performance evaluation, based on traditional measures of shareholder wealth and profits, to include measures relating to diverse stakeholder groups who have non-equity stakes. Many firms do strive to maximise shareholder value while, at the same time, trying to take into account the interests of the other stakeholders.

Sundaram and Inkpen (2004a) argue that shareholder value amplification matters because it is the only objective that leads to decisions that enhance outcomes for all stakeholders. They argue that identifying a large number of stakeholders and their core values is an unrealistic duty for managers. Proponents of the stakeholder viewpoint also argue that shareholder value maximisation will lead to expropriation of value from non-shareholders to shareholders.

4.5 Institutional Theory

Institutional theory suggests that internal operating processes loosely coupled with the observable structures accomplish the real work of an organisation. As a result, organisations with the appropriate structures in place will avoid deep investigations of their function by external parties (Meyer and Rowan, 1977). Institutional economics tends to study an economic phenomenon within its entire surrounding environment, including social, cultural, political and any other related factors.

Organisations are subject to rules and regulations to which they must conform in order to ensure their legitimacy and thus have access to resources and ensure their survival (DiMaggio and Powell,

1983). However, these rules and regulations do not necessarily guarantee that organisations will continue to operate efficiently (Meyer and Rowan, 1977 and Scott & Meyer, 1983).

According to institutional theory, the basic purpose of corporate governance is to assert that an organisation is linked to an environment by clarifying and defining its goals, which should accord with expectations of the environment (Judge and Zeithaml, 2004). Thus, according to this theory, corporate governance should be involved in defining the organisational goals of the corporation in the context of an existing value system within the firm.

The institutional theory view of corporate governance considers changes in organisational processes over time and how governance structures "fulfil ritualistic roles that help legitimise the interactions among the various actors within the corporate governance mosaic" (Cohen *et al*. 2007b, p11).

The institutional theory suggests that the adoption or rejection of changes should be studied in relation to historical, social and political issues that are relevant to understanding organisational changes in their full complexity (Scapens (1991) and Cohen *et al*. (2002, 2007b). Therefore, implementing a new system, such as corporate governance recommendations, will succeed to the extent that there is broad similarity between the new system and existing systems in the organisations (Yazdifar, 2003).

DiMaggio and Powell (1983) suggest that institutional pressures drive organisations to take on similar characteristics through the need to organise themselves in a manner that is similar to other organisations in the same environment. This process is known as isomorphism, and it assumes that organisations adopt structures and management practices that are considered legitimate and socially acceptable by similar organisations, regardless of their actual effectiveness (Saudagaran & Diga, 1997).

DiMaggio and Powell (1983) suggest that a process of isomorphism could take place in three ways, namely, coercive isomorphism, mimetic isomorphism and normative isomorphism. Coercive isomorphism represents the political pressure and the organisation's need for legitimacy. It includes pressures applied to comply with corporate governance recommendations by regulators or stock

exchanges. As a result, an increasing number of organisations have applied recent corporate governance recommendations, such as a more independent board and the establishment of an audit committee.

Mimetic isomorphism is a method of change initiated internally by the organisation (DiMaggio and Powell, 1983). Organisations tend to copy other organisations that are considered to be legitimate and successful. Under this view, corporate governance processes may become more similar over time (Barreto and Baden-Fuller, 2006; DiMaggio and Powell, 1983), as organisations are coerced to become similar through regulation (such as SOX), or choose to follow "best practices," or mimic other organisations, to enhance their legitimacy (Cohen *et al*. 2007b).

Kalbers and Fogarty (1998, p.131) state that, under this view, "Organisational structures become symbolic displays of conformity and social accountability". These ceremonial efforts may not be closely related to how a given task is actually accomplished. Cohen *et al*. (2007b) note that the auditor bears great responsibility for reliable financial reporting when the audit committee's role is primarily ceremonial, although the committee's symbolic efforts can lead to effective questioning of management.

Mimetic change happens when organisations perceive that certain corporate governance attributes contribute to the governance structure within successful organisations and follow similar accounting treatments and choices, and this will increase compliance with accounting standards and corporate governance recommendations over time.

Normative isomorphism is derived from the professionalism of involved individuals. Burns (2000) argues that organisations feel obliged to adopt structures that are advocated by professional bodies in their field. Thus, accountants and auditors, through their professional bodies, have pushed for more compliance with accounting and auditing standards, listing rules and corporate governance recommendations.

Fogarty (2005) concludes that the key attribute of institutional theory lies in its capacity to highlight the distinction between what organisations actually accomplish and what their structures suggest to

the external environment. This suggests that this theory is very useful for researchers who aim to compare the best practice for the corporate governance attributes with the actual performance for such attributes.

Empirically, Kalbers and Fogarty (1998) use both agency theory and institutional theory to investigate audit committees and argued that the use of agency theory alone can not distinguish qualitative differences of the audit committee as a corporate control mechanism. Moreover, they find that audit committee effectiveness is more attributable to internal issues than to external issues, such as agency variables.

However, they do not specify internal issues in their study. Instead, they considered the failure to document relationships between the audit committee and agency variables as an indicator of the great influence that internal factors could have on audit committee work. Kalbers and Fogarty's (1998) argued that neither theory alone is as useful as their synthesis. As a result, they suggest the use of both theories in any attempt to evaluate audit committee effectiveness, but they did not specify a theoretical framework that could link the two theories together.

4.6 Summary

Among the various theories discussed, agency theory is the most popular and has received the most attention from academics and practitioners. The influence of agency theory has been instrumental in the development of corporate governance standards, principles and codes. Mallin (2007) provides a comprehensive discussion of corporate governance theories and argues that the agency approach is the most appropriate because it provides a better explanation for corporate governance roles in the UK context considering the complexity of the legal system, culture, ownership and other structural differences.

However, the alternative theories of stewardship theory, institutional theory and stakeholder theory have become prominent in recent times. As discussed above, agency theory focuses on conflicting interests between principals and agents. The decision making process is delegated by shareholders to the managers. Hence, due to managers pursuing their own interests, various corporate

governance mechanisms are needed in 'monitoring managerial decision-making and performance, especially through NEDs (Roberts *et al*., 2005).

Stewardship theory outlines a co-operative and optimistic view of relationships within the corporation by assuming that managers are good stewards and do not misappropriate corporate resources; their behaviour is also conditioned by non-financial motives such as the need for recognition of their achievements and performance (Van den Berghe and Levrau, 2004). Thus the directors' role is to counsel and advice rather than to monitor.

While stewardship theory considers managers as stewards and proposes an alignment of interest between the managers and organisational objectives, stakeholder theory explores the interests of different stakeholders.

Stakeholder theory does not revolve around the directors monitoring roles or value maximisation of shareholder wealth, but around social responsibility and ethical considerations. Unlike the agency theory that places primary emphasis only on shareholders' interests, stakeholder theory places emphasis on considering the interests of all stakeholders.

The Stakeholder theory is also subjected to great criticism. For example, Sternberg (1997) argue that Stakeholder theory is incompatible with business as it ignore that business is the activity of maximising long-term owner value by adding competing stakeholders interests such as customers, suppliers and employees into this objective.

He added that Stakeholder theory of accountability is unjustified and criticised this theory for being incompatible with corporate governance as an organisation that is accountable to everyone is actually accountable to no one. Finally, he argued that the stakeholder theory concept face a problem of identifying the information needs when an individual represent various stakeholders by having multiple stakes in the business as employee, consumer, shareholder and a member of the local community.

While Stakeholder theory undermines private property, agency and wealth, the Institutional theory and Stewardship theory neglect the power of interest-based behavior. Yazdifar (2003) and Albrecht *et al*. (2004) also highlight the fact that the relationship between principals and their agents based on the stewardship or institutional theory perspectives may provide opportunities for management to commit fraud. Hence, Agency theory is the only perspective that recognises human being self-interest behavior that managing earnings to achieve personal financial rewards is part of it.

The institutional theory has also been subject to great criticism, Yazdifar (2003) criticises the institutional theory, arguing that it suffers from inadequate consideration of the relation between environmental determinism and cultural and political factors within organisations. He discussed three main deficiencies of this theory. First, it neglects the power of interest-based behaviour. Secondly, it fails to explain the processes of organisational change. Thirdly, it neglects the internal generation of institutionalised forms. He adds that the institutional theory must be complemented by other perspectives.

Each of these four theories presents significant insights into corporate governance problems. For instance, stakeholder and institutional theories explore common interactions between the organisation and its environment (Judge & Zeithaml 2004).

Culpan and Trussel (2005) confirm that agency theory is useful in clarifying the dimensions of unethical practices in the accounting and financial issues (such as EM), while stakeholder theory is helpful in explaining the unethical practices which damage employee, creditor, investor, government, and society.

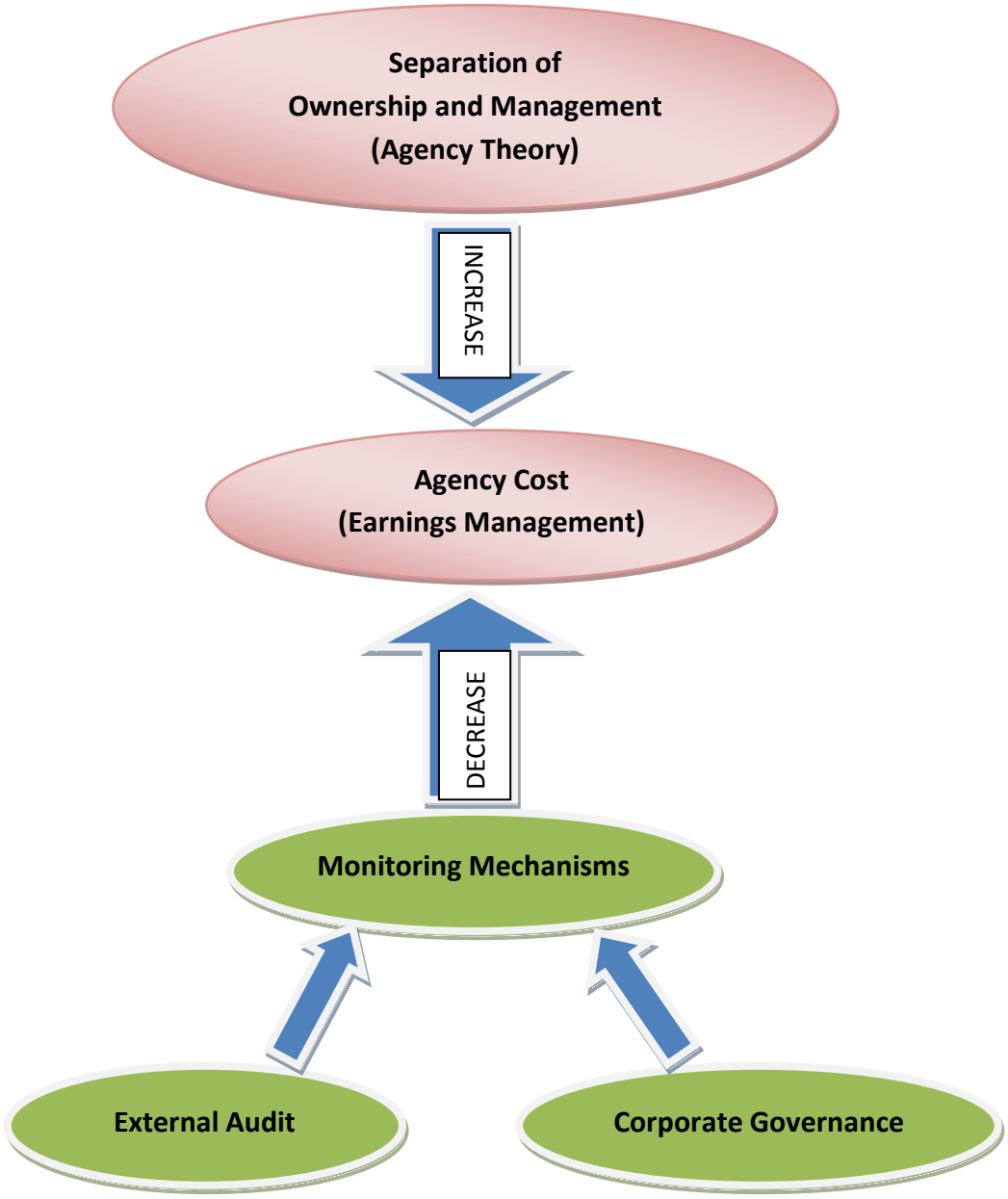
Others studies (e.g. Boyd, 1995; Hillman & Dalziel, 2003) take a different approach, not limited to a distinctive theory. Boyd (1995) argues that the seemingly contrasting perspectives of the agency and stewardship theories can both be correct, but under different environmental conditions, by using a contingency approach. Hendry and Kiel (2004) illustrate that the selection of a particular theoretical approach depends on 'contextual factors' such as board power, environmental uncertainty and information asymmetry.

Thus, each of these theories is useful in considering the efficiency and effectiveness of the monitoring and control functions of corporate governance (Hung, 1998). Daily *et al*. (2003, p.372) take the view that "many of these [other] theoretical perspectives are intended as complements to, not substitutes for, agency theory."

To conclude, this study will draw on agency theory to test whether hypothesised relationships exist between corporate governance and external audit monitoring attributes and the incidence of earnings management. The agency theory framework has the ability to explain the motivations for earnings management. It also explains the expected association between corporate governance and external auditor monitoring mechanisms and earnings management as shown in the flow chart 4.1 below.

Flow Chart 4.1

Overview of Research



Chapter Five

Research Hypotheses and Methodology

5.1 Introduction

Previous chapter illustrated different theoretical approaches and highlighted the most suitable theory for this research. The aim of this chapter is to develop a theoretical link between each of corporate governance and external audit variables and earnings management. It also provides a description and analysis of the methods applied in collecting and preparing the data deemed necessary to test for the existence of a relationship between earnings management and the attributes of corporate governance and the external audit.

Firstly, after highlighting the theoretical perspective of this research, the measurement of the dependent variable (earnings management) will be demonstrated. Then, a full description of how each of the independent variables will be measured and hypotheses will be developed and stated. This study classifies the independent variables into five broad categories, namely, board composition, non executive directors' (NEDs) commitment, ownership structures, audit committee effectiveness and external audit factors, and this is followed by a description of how the control variables are measured. Secondly, this chapter discusses the sample selection and the selection process. Databases used to collect the information necessary to conduct this study will then be specified. Thirdly, different possible analytical procedures will be discussed to determine their suitability and relevance. Then, the analysis procedures undertaken will be detailed. Finally, a summary of the variables, models and hypotheses of the study will be presented. The results emanating from those choices will be presented in chapter six.

5.2 Research Philosophy

An essential step in conducting social science research is to determine and justify the chosen research philosophy adopted by the researcher. Inter-related paradigmatic assumptions regarding the nature of reality (ontological assumption), the researcher's role (epistemological assumption) and the

research process (methodological assumption) trigger scientific research. The researcher's position vis-ä-vis these assumptions infuse the research, and will determine the research philosophy adopted in data collection, analyses and interpretation of results.

Research philosophy has two paradigms, these are positivistic and the interpretative paradigms (Hussey and Hussey, 1997; Patton, 1990). These paradigms represent the end of a continuum in social science research which illustrates the links between these ontological, epistemological and methodological assumptions. Research philosophy can also be broadly alienated into three views (i.e. positivism, interpretivism and realism) depending on the researcher's philosophical thinking (Saunders et al. 2003)

The philosophy of positivism prefer 'working with an observable social reality and that the end product of such research can be law-like generalizations similar to those produced by the physical and natural scientists' (Remenyi et al. 1998 cited in Saunders et al. 2003, p.83). This paradigm assumes that an apprehensible reality exists that is driven by immutable natural laws and mechanisms (Guba and Lincoln, 1994, p. 109). This paradigm is described by quantitative or scientific approaches to explain, predict and analyse testable hypotheses relating to associations between measurable variables since it assumes that reality is `objective' or independent of observers.

The interpretative paradigm, on the other hand, assumes that reality is `subjective' or dependent on observers as they are actually part of what is being observed (Patton, 1990). This paradigm is therefore described by qualitative approaches. Interpretivism has a range of alternative names including hermeneutic, qualitative, phenomenological and inductive research (Ticehurst and Veal 1999, p.20).

Unlike positivism, interpretivism, attempts to understand the point of view from the subjects' perspective and is based on the view that researchers study meaningful social action, not just the external or observable behaviour of people in order to capture the rich complexity of social situations (Saunders et al. 2003, p.84). The interpretative approach proponents argue that it is appropriate to adopt this philosophical approach in business research due to the constant changes in

the surrounding environment. Hence, generalizations based on the positivist approach may not explain the uniqueness of particular situations.

Alternatively, the realistic approach also called dialectical materialism, class analysis and structuralism- combines positivistic and interpretivistic paradigms since some argue that positivistic and interpretivism approach assumptions are unrealistic (e.g. Ryan et al., 2002). In other words, realism criticizes positivism for 'failing to deal with the meanings of real people and their capacity to feel and think' and the 'interpretivism approach for being too subjective and relativist' (Neuman 1997, p.74).

Realism approach recognizes the 'social reality' like positivism but it focuses on change and conflict which may not always be apparent. It is more concerned with beliefs, assumptions and moral values, thus researchers need to understand history, adopt a set of values, and know where to look for underlying structure to interpret the facts (Neuman 1997).Therefore, the realistic paradigm recognises the subjective reality and attempts to understand people's socially constructed interpretations at the same time (Saunders et al., 2000).

5.2.1 Research Theoretical Approach

This research will adopt the positivism approach due to its relevance to this type of research. Clarke (2004) provides a summary of the main methodologies for research on corporate governance namely data base surveys, questionnaire surveys, interview surveys and observation. Each method has its pros and cons. The main method which is appropriate to the positivism approach is data base surveys based on analysis of published sources (Clark 1998) which will be used by this research study.

The deductive approach tends to be preferred more by positivist researchers than interpretivist (Ticehurst and Veal 1999). The deductive research process involves the development of a theory or hypothesis to test the hypothesis. The inductive approach is used when data is collected first, and a theory is developed as a result of the data analysis.

Positivism is associated with scientific, experimental, quantitative and deductive frameworks where researchers seek specific quantifiable observations thus regularly using statistics and experiments to test their hypotheses (Neuman 1997). Thus, this research uses a deductive approach. It is an explanatory study. Previous research has been mostly conclusive in the role of corporate governance and external audit in reducing earnings management which help in developing testable hypotheses and research propositions.

Quantitative methods such as the analysis of financial data are often used to determine corporate governance effectiveness in empirical studies. In corporate governance research, board composition measures such as board independence and audit committee independence- measured by the ratio of non-executive directors to total number of directors- is used in interpreting the impact of board composition on the extent of a company earnings management level.

There is a scarcity of research on corporate governance which uses qualitative approaches. This is may be due to the limited information available as to how boards really work due to the confidential nature of board meetings and process, which in turns makes it hard for researchers to capture the relative information on how a corporate board may contribute in enhancing earnings quality.

However due to the difficulty of obtaining access to this information, the interpretivism and realism approaches have only been used in limited case studies and therefore research tends to be on material that can be readily obtained from outside sources such as published reports and media releases (Leblanc and Gillies 2005).

This research aims to examine the effectiveness of corporate governance and external audit mechanisms to detect earnings management in the UK and attempts to establish the relationship between these components. Consequently, the research employed a quantitative approach where relationships between discretionary accruals and a set of independent financial and non-financial variables on listed companies were tested using analysis of data. The main purpose of this method is to identify the relationship between earnings management and a set of explanatory variables, namely, board composition, audit committee effectiveness, ownership structures, external audit variables and a comprehensive set of control variables. This approach enables the researcher to test

the adopted theory against unique and large sample observations that make findings more generalised to the study population as a whole.

5.3 Hypotheses Development

5.3.1 Measurements of the Dependant Variable (Earnings Management)

Chapter two illustrated the nature and types of earnings management, such as timing the recognition of certain events concerning revenues and expenses and accounting choices and changes. However, the use of these techniques must be disclosed in the financial statements. Another way to practice earnings management is through accruals management, which managers may prefer because it is less visible and more difficult to detect.

The accruals method has been used extensively in earnings management research as it is not only captures the effect of accruals management but also the effect of some of the earnings management techniques, such as changes in accounting estimates and manipulating recognition timing, as mentioned above.

The vast majority of recent earnings management literature relies primarily on discretionary accruals as a proxy for earnings management and it applies various models to isolate discretionary accruals within the total accruals (see Dechow *et al*., 1995). This study uses the discretionary accruals portion as a proxy for earnings management. Discretionary accruals are defined as the difference between actual and expected accruals.

This study illustrates the development of discretionary accruals as a measure for earnings management by examining previous key studies that suggests and develops this measure and more recent suggested amendments for this measure.

To begin, Healy (1985) argues that the amount of non-discretionary accruals is basically the mean of total accruals over an estimation period prior to the event period as follows:

$$NDA\ it = \sum j\ TA\ it\ /T$$

Where:

NDA= Non-discretionary accruals,

j = year of the event period.

TA = Total accruals scaled by lagged total assets,

T = years included in the estimation period,

Thus, the discretionary accrual in the event period is the difference between total accruals in that period and non-discretionary accruals.

DeAngelo (1986) uses the last period's total accruals scaled by lagged total assets, as a measure of non-discretionary accruals as follows:

$$NDA_{it} = TA_{it-1}$$

Where all the notations are as previously defined, the difference between total accruals in that period scaled by lagged total assets and that estimation of the non-discretionary accruals is the amount of discretionary accruals in the event period. The DeAngelo (1986) model assumes that this first difference in total accruals has an expected value of zero under the null hypothesis of no earnings management.

Both the Healy (1985) and the DeAngelo (1986) models use event studies where earnings management is assumed to take place only in the event period. They are applied on a time-series basis by using an estimation period before the event period to estimate coefficients used in computing non-discretionary accruals in the event period. The models are also applied on a cross-sectional basis through an estimation industry sample of the same two-digit Standard Industry Classification (SIC) code, and the residuals of the cross-sectional regression are used to indicate discretionary accruals.

Jones (1991) introduces a new methodology to separate discretionary accruals using a regression analysis approach by relating non-discretionary accruals to the changes in a firm's economic conditions that may induce such accruals, such as the gross property, plant and equipment (PPE) and the change in revenues (Δ REV) as explanatory variables to reflect changes in a firm's economic

conditions before managerial manipulation. Gross PPE adjusts for expected depreciation expense and the change in revenues adjusts for expected changes in working capital accounts.

The Jones (1991) model differs from the previous two studies in that it does not assume that non-discretionary accruals are consistent over time but assumes that these accruals are affected by changes in the firm's economic conditions. The model introduces the change in revenues and the level of the gross property, plant and equipment to capture these economic conditions. Therefore, non-discretionary accruals in the Jones model are estimated as follows:

$$NDA_{it} = \alpha (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} / TA_{it-1}) + \beta_2 (PPE_{it} / TA_{it-1}) \qquad (1)$$

Where:

TA it -1 is the book value of total assets of firm i at the end of year t -1,

Δ REVit / TA it -1 is sales revenues of firm i in year t less revenues in year t – 1 scaled by TA it -1,

PPEit / TA it -1 is gross property, plant and equipment of firm i at end of year t scaled by TAit-1,

α β1 β 2 are estimated parameters.

In this model, the parameters are estimated using a time-series model for each firm using at least 8 firm-year observations by applying the following model (equation 2) in the estimation period:

$$TAC_{it} = \alpha (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} / TA_{it-1}) + \beta_2 (PPE_{it} / TA_{it-1}) + \varepsilon_{it} \qquad (2)$$

The Jones (1991) and Dechow *et al*. (1995) models were originally introduced as a time series. However, DeFond and Jiambalvo (1994) propose a cross-sectional Jones model rather than a time series model and many recent studies estimated equation (2) using cross-sectional discretionary accruals (e.g. Klein, 2002b; Xie *et al*., 2003; and Abdul Rahman, 2006).

Defond and Jiambalvo (1994) compare both the Jones' time-series model and a modified cross-sectional model in their investigation of earnings management close to debt covenant violations. They find that both models reveal the same results as the magnitude of coefficients from the cross-sectional models is quite similar to those obtained from the time-series models. Bartov *et al*. (2001)

reconfirm the previous findings that the cross-sectional model is superior to the time-series model in detecting earnings management.

Dechow *et al*. (1995) test several models for detecting earnings management and conclude that adding the change in receivables to the Jones model leads to a more powerful model. They argue that managers can manipulate earnings through the discretionary revenues by timing the recognition of these revenues, such as recording them at year end when the cash has not yet been received. The total accruals will be affected through the increase in receivables; thus the change in receivables is assumed to be discretionary. In other words, revenues are not completely exogenous and they may be manipulated by managers through fraudulent credit policies.

Therefore, Dechow *et al*. (1995) suggest that the change in receivables should be deducted from the total change in revenues when estimating the non-discretionary accruals using the Jones model. This adjustment is intended to remove the effects of managerial discretion over credit sales from non-discretionary accruals, thereby improving the model's power to detect revenue-based earnings manipulation.

Based on this modification of the Jones model, equation (3) estimates non-discretionary accruals in the event period as follows:

$$NDA_{it} = \acute{\alpha} (1 / TA_{it-1}) + \beta 1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1}) + \beta_2 \quad (PPE_{it} / TA_{it-1}) \qquad (3)$$

Where Δ REC it, is the change in receivables as measured by net receivables in the event period, less net receivables in year -1 scaled by total assets at year -1.

The estimation of the parameters α, β1, β2 in the modified Jones model are the same as in the original model in equation (2), assuming that earnings management occurs only in the event period and non-systematic earnings management takes place during the estimation period. Dechow *et al*. (1995) find that this modified Jones model is relatively more powerful in detecting the discretionary accruals than the original Jones model and other models suggested in the earnings management literature.

The modified Jones model deducts the change in receivables from the change in revenues only in the event period, assuming that the change in receivables represents a discretionary portion of the total change in revenues. The model estimates the deferred acquisition costs by the residuals of the following cross-sectional regression using firms within the same two-digit industry SIC code. The UK Corporate Governance Code (2003) to estimate the parameters (equation 4):

$$TAC_{it} = \acute{\alpha} (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \beta_2 (PPE_{it} / TA_{it-1}) + \varepsilon_{it} \quad (4)$$

Kothari *et al*. (2005) argue that the DAC, as estimated by both the Jones and modified Jones models, may result in a severe measurement error in DAC when these models do not control for the prior performance of the company. They propose a model that includes an intercept and control for the firm's performance using the lag of return on assets (ROA) to mitigate the problematic heteroskedasticity and mis-specified issues of the Jones and the modified Jones models in estimating accruals. They suggest adding the ROA of the previous year as an additional regressor to the cross-sectional modified Jones model.

As the Kothari model detects the net effect of all accounting estimations and choices that influence reported earnings, this approach will be used in this study because the corporate governance and auditing literature does not specify that certain accounting manipulations can be directly related to either corporate governance or external audit. McNichols (2000) argues that the aggregate accruals models approach allows for control of additional variables, including corporate governance and external audit attributes.

The present study does not examine a specific event, so, consistent with Kothari *et al* (2005) and Kasznik (1999), it also deducts the receivables change from the revenues change in estimating the coefficients. Therefore, this study estimates the DAC, based on Kothari *et al* (2005) model; thus, the DAC will be estimated by the residuals using firms within the same two-digit industry SIC code to estimate the parameters of the following cross-sectional model (equation 5):

$$TAC_{it} = \acute{\alpha} (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \beta_2 (PPE_{it} / TA_{it-1}) + \beta_3 ROA_{it-1} + \varepsilon_{it} \quad (5)$$

This study uses the cash flow approach to measure total accruals (TAC). Thus, TAC is the difference between income before extraordinary items, discontinued operations (NI) and net cash flows from operating activities (CFO) as follows (1):

$$TAC_{it} = NI_{it} - CFO_{it}$$

Where:

NI it = is the earnings before extraordinary items of firm i in year t,

CFO it = is the net cash flows from operating activities of firm i in year t,

In addition to applying the Kothari *et al*. (2005) model of estimating DAC using TAC, this study also applies the same model using only the current accruals (CAC) instead of TAC following Ashbaugh *et al* (2003).

Guenther, (1994) and Becker *et al*. (1998) suggest that management have greater discretion over CAC than over long-term accruals. Sloan (1996) reports that most of the variations in TAC are driven by CAC. Current accrual adjustments involve current assets and liabilities that support the daily operations of the firm. CAC can be manipulated easily by managers, for example, through advancing revenues recognition before receiving the cash or by delaying expenses recognition through low provision for bad debts. Therefore, discretionary current accruals may be a better proxy for earnings management than discretionary long-term accruals.

Due to the fact that this study does not examine any particular event and focuses on the magnitude rather than the direction of earnings management, the absolute value of different measures of DAC as a dependent variable is used in the main test, however, directions of earnings management will be tested in the further analysis section in the next chapter. Examples of recent studies that use this measure include Chung & Kallapur (2003), Benkel *et al*. (2006) and Choi and Lee (2009).

5.3.2 Development of Hypotheses and Measurement of the Independent Variables

The following section provides detailed information about the measurement of each independent variable. The variables are grouped into five categories, each incorporating individual variables depicting specific attributes pertaining to board of directors' composition, non executive directors' commitment, ownership structure, audit committee effectiveness, and external audit factors. The individual variables for each of these categories are discussed below.

5.3.2.1 Board of Directors' Composition

This section will discuss various board characteristics that are expected to have an effect on earnings management behaviour based on the agency theory perspective that was illustrated in chapter four, namely board size, independence, meetings, diversity, chairman independence, and nomination and remuneration committee independence.

It is worth mentioning that this study makes an assumption regarding the judgment of independence and size of the board of directors. This study sets a period of at least six months of service by a board director in order for him or her to be considered as a member. Also, any director who is appointed or who resigned from the board before the end of the year is not included in the measurement either of board size or of the proportion of the independent directors on the board. This is because firms report their corporate governance status in the end of the financial year whereas the monitoring effect of those directors should have been for the whole year in order to ensure that they have been involved in a sufficient number of board meetings and have developed enough knowledge of the business to enable them to discharge their monitoring roles.

Board Independence

Fama (1980) and Fama and Jensen (1983) describe the board of directors as the most important mechanism in the internal corporate governance structure. They argue that establishing a board that provides effective monitoring of management actions depends on its composition.

From an agency perspective, an independent board is more likely to be vigilant for agency problems as it includes a substantial number of non-executive directors (NEDs) who are dedicated to

monitoring management's performance and behaviour (e.g. Johnson *et al*., 1996; Bainbridge, 1993; Fama, 1980).

One of the major responsibilities of the board is to exercise a monitoring function over executive management on behalf of shareholders (Johnson *et al*., 1996; Bainbridge, 1993; Fama, 1980). This function is expected to have a direct impact on shareholders' perception of the firm's financial reporting integrity. Boards of directors monitor management by ensuring that executive managers fulfil their duties in a manner that serves the best interests of shareholders (Fama and Jensen, 1983).

Fama (1980) asserts that boards which are dominated by insider directors are subject to self-monitoring problems and have weak monitoring of executive directors. Lawler *et al*. (2002) empirically support the expectation that board independence enhances the monitoring function of the board. In addition, Haniffa and Cooke (2002) assert that not only does board independence have a direct impact on a firm's performance, but also that it affects financial disclosure as outside directors can force management to improve the quality of the firm's disclosure.

In the UK, the importance of independent boards has been stressed by the Cadbury Report (1992), which recommends a minimum of three independent directors on the board to ensure that independent directors make a significant contribution to carrying out the board's responsibilities. The Higgs Report on the Corporate Governance Combined Code (2003) further stressed the importance of independent directors and recommends that at least half of the board members should be independent NEDs.

According to the same Code, one of the responsibilities of NEDs is to satisfy themselves on the integrity of financial information and that financial controls and systems of risk management are robust and defensible. These roles of the NEDs should have a direct impact on shareholders' perception of the firm's financial reporting integrity and quality, which, in turn, may constrain management opportunistic behaviour towards the firm's reported earnings.

UK listed companies sometimes determine, in their corporate governance reports, the independence status of their NEDs according to the recommendation of the UK Corporate Governance Combined

Code (2003), which stated that "The board should identify in the annual report, each non-executive director it considers to be independent. The board should determine whether the director is independent in character and judgment and whether there are relationships or circumstances which are likely to affect, or could appear to affect, the director's judgment". However, the independence issue in this study is not determined by relying totally on what firms disclose in their annual reports. This study follows The UK Corporate Governance Combined Code (2003) definition for independence to determine the independence of directors. (See the chairman independence variable in this section for a definition of independence).

In this study, each independence criterion is applied to each NED to determine his or her independence. Any divergence from any of The UK Corporate Governance Combined Code (2003) independence criteria disqualifies the director from the status of an independent director. For example, if a firm claims that a director who has served on the board for over nine years is independent; this study will classify this director as non-independent.

Prior studies find that board members who are independent from management can have a positive effect on the governance of a company, particularly in relation to fraud and discretionary accounting accruals (Beasley, 1996; Peasnell *et al*., 2000a; Peasnell *et al*., 2005; Chtourou *et al*., 2001; Klein, 2002b; Xie *et al*., 2003; Bradbury, 2006; Jaggi *et al*., 2009 and Dimitropoulos and Asteriou 2010). Therefore, consistent with most of the previously mentioned studies, board independence (BRDIND) is operationalised in this study as the proportion of independent NEDs to the total number of board members. Due to the varying size of boards, a percentage variable provides a more accurate and comparable measurement. Additionally, while this variable can be measured in a dichotomous manner, for example, depicting whether or not the majority of the board is considered independent, or whether or not the board is fully independent (both have been used in prior studies), it is believed that the scale type variable used in this study gives greater precision in tests. Consequently, the following hypothesis is proposed.

H1: There is a negative relationship between independent boards and earnings management.

Board Meetings

One essential measure of the effectiveness of a board is how often the board members meet to discuss the various issues facing a firm (Vafeas, 1999; Carcello, *et al*. 2002 and Latendre, 2004). Diligent boards enhance the level of oversight, resulting in improved financial reporting quality. Carcello, *et al*. (2002) find that quality of audit work is associated with the number of board meetings.

In addition to the number of board meetings, board diligence includes other aspects such as preparation before meetings, attentiveness and participation during meetings and post-meeting follow-up (Carcello *et al*. 2002). However, of these, only the number of board meetings is documented publicly.

Conger *et al*. (1998) and Vafeas, (1999) view board meetings as an essential resource in improving the effectiveness of the board and they use this to represent the intensity of board activity. Many other studies, for example, Lipton and Lorsch (1992), suggest that one of the major impediments to board effectiveness is the lack of time to carry out the board's responsibilities. They add that boards that meet frequently are more likely to discharge their duties diligently and in accordance with shareholders' interests. This makes management monitoring more effective, resulting in improved earnings quality.

Therefore, from the agency perspective, a board that is more diligent in discharging its responsibilities enhances its effectiveness and the level of its oversight.

Xie *et al*. (2003) find that EM is significantly negatively related to the number of board meetings. However, Uzun, *et al.* (2004) do not find any significant differences in board meeting frequency between firms involved in fraud and other firms.

Overall, board meetings are considered as a resource that leads to board diligence. Various prior studies examine the impact of board meetings by considering the frequency or number of meetings (Vafeas, 1999; Beasley *et al*., 2000; Carcello *et al*., 2002). This study uses the same approach and

measures board meetings (BRDMEET) by the number of board meetings held annually by the board of directors. This discussion leads to the following hypothesis:

H2: The number of Board meetings is negatively associated with earnings management.

Board Size

There has been continued debate on the role of board size from different perspectives (Jensen, 1993; Yermack, 1996; Dalton *et al*., 1998; Hemalin & Weisbach, 2003). From an agency perspective, larger boards are more likely to be vigilant for agency problems because a substantial number of experienced directors can be deployed to monitor and review management actions (Kiel and Nicholson, 2003).

The agency theory perspective also conceives that larger boards support effective monitoring by reducing CEO dominance within the board and, thus, they protect shareholders' interests (Singh & Harianto, 1989). Larger boards improve the bargaining position of the board with regard to the CEO and, thus, larger boards are more effective in monitoring the management.

Therefore, board size has been shown to be a significant part of the ability of boards to effectively monitor management and to work efficiently together to oversee the running of the business (Persons, 2006). Board size is an indicator of both its monitoring and advisory roles, both of which may contribute to its insight into management behaviour (e.g., Anderson *et al*. 2004; Coles *et al*. 2008). Larger boards are likely to provide more expertise and diversity and to increase the board's monitoring capacity (Dalton *et al*., 1998; Pearce and Zahra, 1992 and John and Senbet, 1998). Additionally, larger boards are more likely to include more independent directors with valuable experience and, hence, they are able to delegate more responsibilities to board committees than smaller boards; this also can prevent or limit managerial opportunistic behaviour (Menon and Williams, 1994 and Xie *et al*., 2003).

Ebrahim (2007) finds that the independence of the audit committee is actually derived from the board's size because the probability of having a totally independent audit committee is more

pronounced in firms with large boards. Klein (2002a) also argue that small board size limits the number of independent directors available to serve on the audit committee, and they report evidence that audit committee independence increases with the size of the board.

While most of the researchers suggest larger boards improve reporting quality (e.g. Peasnell *et al*., 2000a; Chtourou *et al*., 2001; Xie *et al*., 2003; Yu, 2008; Klein, 2002a), a few others suggest that smaller boards may result in enhancing reporting quality (e.g. Yermack, 1996; Alonso *et al*., 2000; Nguyen *et al*., 2007).

In short, both large and small sized boards have their shortcomings. Smaller boards may suffer from having fewer independent directors and are more likely to be 'captured' by management or dominated by management or outsiders, thus making them less effective in detecting earnings management. Larger boards may suffer from bureaucracy and from conflicting interests and views that may not help independent directors to discharge their monitoring duties.

The majority of the literature has examined board size from the strategic perspective. For instance, Lipton and Lorsh (1992) and Jensen (1993) suggest that large boards face difficulties in coordination and communication and this hinders the board's ability to advise, take decisions and engage in strategic planning.

However, this study is more concerned about the monitoring role of the board. John and Senbet (1998) and Klein (2002a) suggest that the board's monitoring capacity increases as the size of board increases. Adams and Mehran (2002) advocate that some firms need larger boards for effective monitoring. Other studies support the argument that large boards provide more monitoring and advice (e.g. Anderson *et al.* 2004; Coles *et al.* 2008).

Moreover, previous empirical studies that examine the monitoring effect of the board by testing the relationship between board size and earnings management find that larger boards are more effective. Xie *et al*. (2003) and Chtourou *et al*. (2001) find that larger boards are strongly associated with lower levels of discretionary accruals.

To examine this effect, various studies measure board size by the total number of the firm's directors (e.g., Yermach, 1996; Beasley, 1996; Vafeas, 2000; Abbot *et al*., 2004 and Coles *et al*., 2008). The present study uses the number of members on the board as a measure of board size (BRASIZE). Consequently, this study proposes the following hypothesis:

H3: There is a negative relationship between large board size and earnings management

Chairman's Independence

"The chairman is pivotal in creating the conditions for overall board and individual director effectiveness, both inside and outside the boardroom". (The UK Corporate Governance Code 2003, p.63). The chairman of the board has the power to control the agenda and board meetings and is likely to influence the market's perception of the extent of managerial monitoring and of the financial reporting process. Jensen (1993) argues that the role of the chairman is to monitor the chief executive officer (CEO) but if these two posts are held by the same person (known as 'duality') the CEO can control the information available to other board members and thus impede effective monitoring. The non-independent chairman becomes problematic if the chairman's interests are different from shareholders' interests.

Thus, the presence of an independent chairman indicates that more control is likely to be exercised over management's activities and behaviour (Dechow *et al*., 1996). An independent chairman (neither founder nor CEO) is expected to improve board monitoring by providing an independent monitoring of the CEO's work (Abbott *et al*., 2004; Fama & Jensen, 1983).

From the agency theory perspective, the chairman should be independent of the company's affairs and this is a useful check on a CEO's over-ambitious plans (Blackburn, 1994). Moreover, Jensen (1993) argues that the board chair's independence enables the board to discharge its oversight responsibilities, especially with respect to the CEO.

Chau *et al*. (2006) argues that concentrated decision-making power, as a result of a non-independent chairman, may impair the board's oversight and monitoring roles. Thus, vesting the power of the

CEO and the chairman in separate persons reduces any strong individual power base, which enhances the board's ability to exercise effective control.

This study argues that, with regard to improving the financial reporting quality and integrity of firms, it is not ideal if the hierarchical head of the company is not really independent. The chairman is likely to behave with less bias if he or she has no previous relationship with the firm.

In the prior literature, the commonly used measure for chairman independence is whether or not the roles of the chairman and CEO are combined. However, empirical findings reveal that a change in the duality status does not influence the market Daily and Dalton (1997) find that CEO duality does not have a significant effect on performance.

Additionally, the vast majority of the literature finds no association between CEO duality and earnings management (see, for instance, Dechow *et al*., 1996; Peasnell *et al*., 2000a; Chen and Kao, 2004; Lee *et al*., 2006; Chtourou *et al*., 2008 and Chang and Sun, 2009). Chang and Sun (2009) state that they did not find evidence indicating that CEO duality is associated with increased earnings management in either the pre- or post-SOX periods.

Another shortcoming of duality as a measure of chairman independence is the high proportion of firms with/without duality in the previous studies; thus, they may not capture variance in the discretionary accruals. In the U.S., Brickley *et al*. (1997) and Xie *et al*. (2003) find more than 81% and 85%, respectively, of their sample firm-years have CEO duality, whereas non duality is very high in other research contexts such as 88% no duality in China (Liu and Lu, 2007) and it is about 94% in the Australian context (Benkel *et al*., 2006). In the UK, Peasnell *et al*. (2005) find that no duality occurs in 76% of their sample between 1993 and 1996.

The findings of these previous studies may lead to the conclusion that CEO duality may not be an accurate measure of chairman independence. Thus, a better measure of the independence of chairmen is needed in order to measure whether they discharge their duties adequately. Therefore, this study uses the independent chairman criteria of the UK Corporate Governance Code (2003) to judge the chairman's independence.

The chairman independence criteria recommended by that Code are, arguably, quite lenient compared with its NED independence criteria. For instance, the chairman's independence is tested only on appointment; subsequently, the chairman can be considered independent even he or she is the founder of the firm or is entitled to receive extra remunerations like options or a significant share ownership.

Therefore, in this study, the chairman's independence is also measured using the 2003 UK Corporate Governance Code's independence criteria for non-executive directors. The expectation is a negative relationship between chairman independence, measured in this way, and earnings management. According to the Code, an independent non-executive director should not have been an employee of the company or group within the last five years; not have, or had within the last three years, a material business relationship with the company either directly, as a partner, shareholder, director or senior employee of a body that has such a relationship with the company; not receive or have received additional remuneration from the company apart from a director's fee, not participate in the company's share option or performance-related pay scheme, or be a member of the company's pension scheme; not have close family ties with any of the company's advisers, directors or senior employees; not hold cross-directorships or have significant links with other directors through involvement in other companies or bodies; not represent a significant shareholder; and not served on the board for more than nine years from the date of his or her first election. Within firms' corporate governance reports, chairman's details will be judged by the NED independence criteria to determine his or her independence, thus, a dummy variable is introduced that takes the value of one if the chairman is independent and zero otherwise, which leads to the following hypothesis:

H4: There is a negative association between the chairman's independence and earnings management.

Board Gender Diversity

Gender diversity can be taken to represent the concept of board diversity in general (Milliken and Martins, 1996). Gender diversity on boards is also supported by agency theory and other theoretical perspectives. The agency theory emphasises the board balance, thus, representation from diverse groups provides a more balanced board that is likely to prevent an individual or a small group of individuals from dominating its decision-making (Hampel, 1998).

It is argued that female members on the board benefit the firms' governance through an influx of skills, abilities and fresh perspectives and by bringing new dynamics to board deliberations (Jamali *et al*., 2007). Different backgrounds (usually non-corporate) and qualifications may make women more likely to hold unique and rare views that provide a valuable different perspective during board discussions and weave new dynamics into board deliberations.

This complements and empowers the skills possessed by male directors who are more likely to be specialists in functional areas such as operations, marketing and accounting (Zelechowski & Bilimoria, 2004). The varied range of experiences brought by women is found to be good for governance (Huse & Solberg, 2006). Women are also more likely to question conventional wisdom and promote more open discussions (Fondas & Sassalos, 2000; Huse & Solberg, 2006). Such diverse discussions and viewpoints improve boardroom effectiveness and enhance the quality of financial reporting.

In the UK, corporate governance codes have not commented on diverse corporation boards as a corporate governance practice. However, in the USA, the National Association of Corporate Directors and Blue Ribbon Commission recommend that gender, race, age, and nationality diversity should be considered in the selection of directors.

Nguyen, *et al.* (2007) analyse the relationship between a firm's market value and the size and gender diversity of its board of directors using a sample of 832 observations over two years from 2000 to 2001 of publicly listed Australian firms. Their results indicate that gender diversity promotes shareholders' value, as woman director variables are both significantly and economically related to

higher market value of the firm. Similarly, Carter, *et al*. (2003) studies the diversity of boards of directors and documents significant relationships between the proportion of women on the board and a firm's average value.

Felton, *et al*. (2003) summarise two main schools of thought in explaining why women are more risk averse than men. The first school uses the biological differences between men and women to explain their risk preferences. For instance, Zuckerman (1994) report that women produce higher levels of the enzyme monoamine oxidise than men; monoamine oxidise inhibits sensation seeking and thus limits the extent to which risk taking occurs. The second school of thought suggests socio-cultural reasons for men taking greater risks than women. A study by Felton, *et al*. (2003) notes that children are pressured during childhood through peer pressure and social expectations to behave according to their cultural gender roles, which results in a greater propensity for men to take risks.

From a psychological perspective, men and women are different in many ways that may influence their behaviour. Byrnes, *et al*. (1999) review and summarise 150 studies of psychological literature examining differences in risk taking between men and women, and demonstrate that women, on average, take less risk than men. This is supported by Seetharaman, *et al*. (2004) who examine personality correlation with accounting anomalies as one of the symptoms of fraud or asset misappropriation. Personality is analysed by age, gender, position, educational background and collusion. Their survey reports that most fraud cases involved males and they were responsible for more than 75 per cent of all losses by fraud.

Moreover, Bernardi and Arnold (1997) find that women in public accounting firms score higher than their male colleagues on a moral development measure. Ford and Richardson (1994) review thirteen studies that consider gender as a factor in ethical decision making. They find that eight of those studies support the view that women are more likely to behave ethically than men, while five do not support that view. Moreover, these studies suggest that women are less likely to engage in unethical behaviour to gain financial rewards. This may have a direct impact on earnings management that allows managers to gain rewards such as higher compensation because it is linked to reported earnings.

Males have been found to be more willing than their female counterparts to accept unethical behaviour in achieving their goals (Zahra, *et al*., 2007). Furthermore, Betz, *et al*. (1989) find that men are more likely than women to break the laws against insider trading and to violate company policy regarding expense reports, in order to profit personally. Therefore, if earnings management is an illegal practice that involves law breaking and fraud, the previous findings provide evidence of a link between the male gender and a proclivity for illegal activities.

Also, if earnings management involves the risk of losing reputation, job or money, making such a risky decision may be influenced by the director's gender. The presence of women on a firm's board may reduce the incidence of such risk taking.

Forbes and Milliken (1999) offer an in-depth discussion of the effects of diversity on board processes. They conclude from the literature that board effectiveness is likely to depend heavily on social-psychological processes, particularly those pertaining to participation and interaction, the exchange of information, and critical discussion. Participative boards that have an equal power distribution between the CEO and the board, allowing for discussion, debate and disagreement, are found to be associated with a higher proportion of female board members (Pearce and Zahra, 1991).

In summary, it can be argued that the presence of female directors leads to better board dynamics and improved reported earnings quality compared to firms with boards composed of solely one gender. Following Tacheva and Huse (2006), this study measures gender diversity (WOMEN) by the proportion of female directors on the board of directors. This leads to the following hypothesis:

H5: The number of women directors on the board is negatively related to EM

Nomination Committee Independence

Vance (1983) argues that there are four board committees that greatly influence corporate activities: the audit, executive, compensation, and nomination committees. Companies need to be objective in the nomination process for directors. The board needs to have a balanced portfolio of members with diverse backgrounds and specialisations.

The nomination committee's role includes identifying the needs of the company, monitoring board composition, developing the selection criteria, assessing board members' competencies, reviewing succession, evaluating the board's performance, and recommending the appointment and removal of directors (Pease and McMillan, 1993). These objective processes assure that independent, competent directors are appointed and this, in turn, enhances the effectiveness of the board to meet its integrity and monitoring goals.

From an agency theory perspective, nomination committees can play a vital role in enhancing the independence of the board and reducing the influence of management (Jensen, 1993; Firstenberg and Malkiel, 1994; and Westphal, 1998). Having a nomination committee will effectively delegate the director selection process to a group rather than a single person (usually the chairman of the board or the CEO), which is independent of the management and which can make independent recommendations. Thus, nomination committees are more likely to meet shareholder interests by assuring that new board members are independent and qualified for the role.

The UK Corporate Governance Combined Code (2003) stresses the importance of establishing a nomination process that guarantees that outside directors are truly independent. The Code's main principle in nomination committee is that "There should be a formal, rigorous and transparent procedure for the appointment of new directors to the board". The Code's provisions explain that "There should be a nomination committee which should lead the process for board appointments and make recommendations to the board. A majority of members of the nomination committee should be independent non-executive directors."

When the nomination committee has less than a majority of independent directors, management influence over the nomination process can potentially compromise the newly appointed independent director because he or she might feel obligated to those who encouraged and supported the nomination. (Lee, *et al*. 1992).

Empirically, Klein (1998, 2002b) report a negative relationship between board independence and audit committee independence when the CEO sits on the nomination committee. This suggests that the presence of executive directors, including the CEO, on the nomination committee gives them

significant power over the nomination of directors and this impedes the independence of the board and weakens its monitoring process. Therefore, nomination committees that have a majority of executive directors may increase earnings management.

However, Osma and Noguer (2007) investigate the effect of an independent nomination committee on earnings management using 155 Spanish firms. In contrast to Anglo-American results, they find a positive and significant relationship between earnings management and the proportion of independent directors, except when the nomination committee has a majority of institutional directors.

The present study extends prior studies by investigating the impact of independent nomination committees on earnings management from an Anglo-American perspective, using the UK context.

Nomination committee independence (NOMIND) is calculated as the proportion of independent non-executive directors in the nomination committee to total committee members. Due to the varying size of nomination committees, a percentage variable provides a more comparable method of measurement. The conclusion of this survey is that nomination committee independence is vital if NEDs' independence is to be guaranteed. Accordingly, the sixth hypothesis states that:

H6: Nomination committee independence is negatively associated with earnings management.

Remuneration Committee Independence

Vance (1983) argues that the remuneration committee plays a significant role in the board's composition. Davidson, *et al*. (1998) argue that the board committee structure and composition is likely to impact on management's willingness to manage earnings. They find that the composition of a firm's remuneration committee influences the market's perception of golden parachutes. Their explanation of this relationship is that outside directors may be more important on committees (e.g., remuneration and audit committees) that handle agency issues.

This is also supported by the UK Corporate Governance Code (2003) guidelines which recommend the establishment of a remuneration committee that is wholly composed of independent directors. The responsibilities of the remuneration committee include reviewing executive remuneration packages, incentive schemes, superannuation arrangements and the remuneration of directors.

The Code's recommendation of a fully independent remuneration committee, similar to its recommendation of a fully independent audit committee, suggests that shareholder/management conflicts may be as pronounced in remuneration disputes as they are in audit issues. The presence of an independent remuneration committee minimises the risk of managers determining their own remuneration.

One important aspect of the remuneration committee is that, if it discharges its roles adequately, it safeguards board independence by preventing independent directors from receiving any remuneration other than their fees as directors; this is an important Code condition for their independence.

From agency theory perspective, the remuneration committee is a governance mechanism of control by the owners (principals) over top management (the agents) that is expected to set a compensation package that protects the interest of the shareholders, and to monitor management. Dechow *et al*. (1994) suggest that remuneration committees should adjust CEO compensation to prevent opportunistic behaviour. Thus, the remuneration committee guarantees the competence of independent board members and acts as one of the monitors of the CEO.

Clearly, in the absence of the right balance of independent directors representing shareholders' interests on the remuneration committee, the committee is likely to be a legitimating device for managers to set their own remuneration. The level of remuneration is also important in attracting new blood and highly qualified directors; if compensation plans are set to attract them, there is more likely to be a high quality board that meets its monitoring and integrity goals.

In addition, the independent remuneration committee has a key role to play in ensuring a fair and appropriate remuneration scheme. This, in turn, ensures that management ownership is designed to

align the interests of shareholders and management, which will work towards constraining management opportunistic behaviour such as earnings management.

Empirically, Klein (2002b) studies the effect of the presence of the CEO on the remuneration committee on the incidence of earnings management. She finds a positive relation between the CEO's presence and earnings management practice.

Following the UK Corporate Governance Code (2003) recommendations, remuneration committee independence (REMUIND), is measured by a dummy variable that takes the value of one if the remuneration committee is composed entirely of independent directors, and zero otherwise. This discussion leads to the following hypothesis:

H7: Remuneration committee independence is negatively associated with earnings management.

5.2.2.2 Non-executive Directors' Commitment

One perspective of corporate governance not sufficiently explored is NED commitment. NED commitment can be measured by several governance mechanisms, such as their involvement in board meetings, NEDs' private meetings and their activity fees.

Extensive prior research has investigated board independence and size mechanisms. This study narrows the focus from the board's roles in general to the role of NEDs in governing the company. Board effectiveness is established on the assumption that outside directors are more vigilant than inside directors for various reasons. First, NEDs focus on financial performance, which is a central component of monitoring (Fama and Jensen, 1983). Secondly, NEDs have an incentive to keep their personal reputations as independent directors by monitoring management effectively (Fama and Jensen, 1983). Thirdly, Weisbach (1988) finds that NEDs are more likely than insiders to dismiss CEOs following poor performance.

Basically, NEDs are the shareholders' representatives and, since those shareholders are not involved in the firm's daily business, the agency problem is raised. Hence, when NEDs' commitment is low, they do not fulfil their representative role and agency costs can flourish.

One important method of evaluating NED performance, according to the Code (2003, p.10) is "Individual evaluation should aim to show whether each director continues to contribute effectively and to demonstrate commitment to the role (including commitment of time for board and committee meetings and any other duties)."

After extensive reading of the UK Corporate Governance Code (2003), this study proposes two governance mechanisms to measure NED commitment, namely, NEDs' private meetings and NEDs' activity fees.

Non-executive Directors' Private Meetings

NEDs' private meetings are recommended by the UK Corporate Governance Code (2003, p.5). It states that "The chairman should hold meetings with the non-executive directors without the executives present". According to the Code, one of the responsibilities of NEDs is to satisfy themselves on the integrity of financial information and that financial controls and systems of risk management are robust and defensible. One important method of evaluating NED performance, according to the Code (2003, p.10), is "Individual evaluation should aim to show whether each director continues to contribute effectively and to demonstrate commitment to the role (including commitment of time for board and committee meetings and any other duties)."

Previous corporate governance and EM studies focus mainly on NEDs' independence rather than their commitment. However, some previous studies conclude that independent boards do not necessarily perform better (e.g. Bhagat and Black, 2002; Kiel and Nicholson, 2003; Dulewicz and Herbert, 2004).

These conflicting results may be due to NED independence being a vague concept that is actually harder to measure than NED commitment. Gilson & Kraakman (1991 and Patton & Baker (1987)

support the view of critics of the role of NEDs that they may have little involvement in monitoring management because they lack real independence, time and sufficient relevant information.

NED independence should not be taken for granted because NEDs are entirely dependent on the executive team for information and knowledge about the company (Stiles and Taylor 2002). Their lack of knowledge and limited time, compared to executive directors, requires them to work closely with the executive directors (Keasey *et al*. 2002). As a consequence, their independence may be impaired.

Charles (2005) argues that NEDs' reliance on the information they receive from staff and external advisers has not previously been a problem, since their role has traditionally been one of strategic guidance. However, with corporate governance high on today's agenda, it is questionable whether NEDs should be so reliant on what they are told; NEDs should dedicate more time to their role in order to have more access to the necessary information.

The lack of real NED independence can be deduced from Higgs' (2003) study of more than 600 executive and non-executive directors of UK-listed companies. It finds that 48 per cent of NEDs are appointed through personal contact with a board member, while only 4 per cent are appointed through a formal interview.

Thus, when NEDs hold confidential meetings without the presence of executive directors, they may be able to overcome this shortcoming because meetings usually provide important information that reduces NED dependence on the firm's management for information about the business.

Another criticism of NEDs is that they are too busy with other commitments and directorships and are only involved with the company on a 'part-time' basis. Fich and Shivdasani (2006) detect a negative effect of busy boards on several performance ratios caused by the increasing distraction of multiple directorships. Jiraporn *et al*. (2008) find a negative impact of busy boards on the firm's value caused by deeper diversification. They explain this relation by the board members' shortage of time.

These findings are not exclusive to a one-tier corporate governance system, such as in the US; there is also a negative effect of busy members of the supervisory board on the performance of a company in a two-tier corporate governance system, such as in Germany (Oehmichen *et al*., 2009).

Song and Windram (2004) conduct a survey of FT 500 UK companies on the operations of UK audit committees. They report that the lack of time is perceived to be the greatest impediment to audit committee effectiveness. They add that pressure from executives is a prevalent problem, even after the corporate governance reforms.

Hence, NEDs who can discharge their duties adequately are those who show more involvement in the firm's business through NED meetings. Indeed, it might be easier to divide NEDs into effective and ineffective NEDs based on their commitment rather than their independence.
Ideally NEDs should be prepared to speak up and ask difficult questions, they should also be prepared to differ, negotiate and respect others' views (Dixon and Ogan, 2003). The latter study suggests that board effectiveness is related to the degree to which NEDs acting individually and collectively are able to create accountability within the board in relation to both strategy and performance. They suggest that a variety of behaviours such as questioning, probing, discussing, informing and debating are at the very heart of how NEDs seek to be effective.

NED meetings can give some freedom and courage for NEDs to discuss controversial issues, such as accounting choices and methods, which may not be raised in meetings of the full board.

The directors are the shareholders' representatives, yet this focus can be kept only by the commitment of NEDs. A greater awareness is required from directors to include more interaction and more communication with management that should lead to more understanding of the business. A common feature of NEDs is that the majority of them work part-time, as they usually have another full-time directorship. For the NED role of strategy-making, these various positions and experience may be very useful for NEDs.

However, for their monitoring role, this can be a drawback. Involvement in a number of businesses can lead to missing some board meetings or not being as engaged as they ought to be. In this study,

the concern is more about the monitoring role of NEDs than their strategy making role since it is monitoring that is likely constrain EM practices.

Overall, NEDs' private meetings are considered as a resource that leads to board diligence. Carcello *et al*. (2002) concede that board diligence includes several more factors than mere board meetings. Various prior studies examine the impact of board diligence by considering only the frequency of board meetings (Vafeas, 1999; Beasley *et al*., 2000; Carcello *et al*., 2002).

This study uses NEDs' meetings as an indication of the time and effort they devote to the firm's affairs, because this may help them to detect EM behaviour. The UK Corporate Governance Code (2003) does not specify the number of NEDs' meetings that are considered to be sufficient. Firms' financial reports also do not specify the number of such meetings held during the year but simply state whether or not such a meeting has been held. Consequently, this study uses a dummy variable to measure NEDs' private meetings (NEDMEET) that takes the value of one if NEDs meet without the presence of the executive directors, and zero otherwise. This discussion leads to the following hypothesis:

H8: There is a negative association between non-executive directors' private meeting and earnings management.

Non-executive Directors' Fees

Prior studies document that high share ownership by independent directors reduces the likelihood of directors deviating from the interests of shareholders (e.g. Bhagat and Black, 1999; Bhagat *et al*., 1999). The Hampel Report (1997, p.14) notes that "NEDs remuneration can be a useful and legitimate way of aligning the directors' interests with those of shareholders".

Jensen, (1989) suggest that NEDs who hold a large equity ownership in the firm are likely to have a greater incentive to monitor executive directors than those without such a stake. Empirically, Gerety and Lehn (1997) and Beasley (1996) find a negative association between financial reporting fraud and NEDs' ownership. Chtourou *et al*. (2001) find a negative association between earnings management and NEDs' ownership.

However, this study assumes that the workload of NEDs contributes to the determination of the fees they are paid. If NEDs are required to spend more time and effort in their role, they will expect to be remunerated accordingly. This argument is supported by Mallin (2007) who concedes that NEDs should be paid a fee commensurate with the amount of time that they are expected to devote to their role, and she supported the idea that remunerating NEDs with share options is inappropriate as it may give NEDs a rather unhealthy focus on the short-term share price of the company.

Additionally, Adams and Ferreira (2004) use a large panel data set on director attendance behaviour in publicly-listed firms for the period from 1996 to 2003. They provide robust evidence that directors are less likely to have board meeting attendance problems when board meeting fees are higher. They suggest that directors appear to perform even for very small financial rewards.

Corporate governance may take the view that well-paid, independent and competent non-executive directors who demonstrate their suitability and discharge their roles adequately, are probably the cheapest form of insurance available and the most confidant assurance that public investors can have against expensive nasty surprises.

This study will measure NEDs' fees (NEDFEE) as the percentage of total fees paid to NEDs divided by the total number of NEDs. While no prior studies have examined the link between NEDs' fees and earnings management, the previous line of reasoning indicates that higher NEDs' fees increase NEDs' commitment to their monitoring duties over the financial reporting process. Given the possible impact of NEDs' fees on earnings management, this study hypothesises the following:

H9: There is a negative association between non-executive directors' fees and earnings management.

5.3.2.3 Ownership Structure

As described in the literature review chapter, the ownership structure of a company can be of critical importance to the quality and comprehensiveness of the oversight administered in that company (Pergola, 2005; Song & Windram, 2004). Three variables represent the internal and external

ownership (namely managerial ownership, institutional ownership and blockholder ownership) are used to represent the ownership structure of firms in this study.

Managerial Ownership

The agency theory suggests that a higher percentage management ownership implies higher firm value, since the goals of management and other shareholders are more closely aligned (Jensen and Meckling, 1976). Jensen and Meckling (1976) also use the agency theory to argue that managers with a high ownership are less likely to alter earnings for short-term private gains at the expense of other shareholders. Shareholders are likely to perceive that managers' interests are aligned with their interests when managers become shareholders by acquiring equity shares. Thus, managers with high level of ownership in the firm are more likely to report reliable earnings that reflect the underlying economic value of the firm (Warfield *et al*. 1995).

The empirical literature documents a positive relationship between a firm's value and high managerial ownership (e.g. Agrawal and Knoeber, 1996 and Yermack, 1996). Other empirical studies support the argument that capital market pressure leads firms with low managerial ownership to make income-increasing accounting choices (e.g. Stein, 1989 and Jensen, 1986). Alexander and Cohen (1999) examine the association between ownership structure and corporate crime and find that firms with larger managerial ownership commit less corporate crime.

These studies suggest the proposition that high managerial ownership is an effective corporate governance mechanism. In contrast, managers in firms with low managerial ownership are more likely to have a short-term horizon and to exploit accounting choices to alleviate accounting-based contractual constraints, including ensuring job preservation and maximising incentive compensation (Nagy *et al*., 1999).

While several empirical studies find a negative association between managers' ownership and earnings management (Gul *et al*., 2003; Klein, 2002b), some other studies find a negative relation between a high level of managerial ownership and earnings management (e.g. Warfield *et al*., 1995).

This may be due to managers with a high level of ownership becoming more risk averse and less willing to invest in projects with potentially high payoffs (Wright *et al*. 2006).

In the UK context, Peasnell, *et al*. (2005) study this relation by hypothesising that the constraining association between earnings management and the proportion of outside directors and the existence of an audit committee will be more pronounced when the level of managerial share ownership is low. They measure managerial ownership as equal to one when managerial share ownership is less than 5%, and directors' ownership is measured by the number of shares beneficially owned by inside directors over total number of shares outstanding. However, they find little support for these conjectures.

In spite of some inconclusive results, there is overwhelming support for the notion that managerial ownership aligns the interests of owners and managers and provides a device to control risk taking behaviour by managers (Fama, 1980; Jensen and Meckling, 1976; Chung and Pruitt, 1996).

Unlike the previous UK evidence provided by Peasnell, *et al* (2005), but following other prior research (e.g. Hutchinson and Gul, 2004; Gul *et al*., 2002), this study will measure managerial ownership (MNGOWN) as the percentage of total shares held by executive directors divided by the total number of shares. Given the impact that managerial ownership is likely to have on earnings management, this study hypothesises the following:

H10: High managerial ownership is negatively related to earnings management.

Institutional Ownership

Institutional investors are considered to be an essential monitoring device and able to control managers in more depth than small shareholders can (Black, 1992). Large institutional investors with substantial stakes have the power, resources and ability to monitor, as well as stronger incentives to discipline and influence managers' behaviour (Coffee, 1991). The UK Corporate Governance Combined Code (2003, p.24) emphasises the institutional investors' role in corporate

governance stating that, "Institutional shareholders should enter into a dialogue with companies based on the mutual understanding of objectives".

Bushee (1998) finds evidence that indicates managers are less likely to cut R&D to reverse an earnings decline when institutional ownership is high. Moreover, institutional investors are found to influence executive compensation (Clay, 2000 and Hartzell and Starks, 2003) and to influence board structures (Wu, 2004). Koh (2003), Hsu and Koh (2005), Liu (2006), Yu (2008), Charitou *et al*. (2007) and Cheng and Reitenga (2009) provide some recent empirical studies that examine the association between institutional ownership and aggressive earnings management. They document a negative relationship, which suggests that institutional investors, especially long-term ones, are an effective governance mechanism.

However, Peasnell *et al*. (2005), using UK data from 1993 to 1996, examine institutional investors, measuring institutional ownership as the number of shares owned by institutional investors over total number of shares outstanding, and find no relation between EM and institutional investors. However, this study will measure institutional ownership (INSTOWN) using the average percentage of shares outstanding owned by institutional investors, as in Liu (2006). This study hypothesises the following:

H11: High institutional ownership is negatively related to earnings management.

Blockholders' Ownership

Outside blockholders have more incentives to monitor managers' actions than small external shareholders because monitoring is more cost-efficient for external blockholders (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). Jensen and Meckling's (1976) study was one of the first to suggest that monitoring by blockholders can be an effective device to reduce agency costs. Many subsequent studies suggest that outside blockholders can effectively monitor managers' behaviour (Shleifer and Vishny, 1997; Barclay and Holderness, 1991). Outside blockholders' monitoring of managers prospectively restricts managers' discretion with financial reporting and helps to mitigate managers' incentive to manipulate earnings.

It is thought that blockholders ownership, like institutional investor ownership, has a positive bearing on governance oversight. The notion that blockholders have a greater ability than the average shareholder to monitor is not only supported theoretically, as discussed earlier, but also empirically by the general consensus of prior studies. Prior findings propose that large outside blockholders have an increased incentive to monitor the actions of management due to their larger proportional stake in the entity (Cronqvist *et al*., 2008), and they have stronger voting power (Persons, 2006).

In the UK context, Peasnell *et al.* (2005) study the relationship between blockholders and earnings management. They measure the blockholders as equal to one when their ownership is equal or exceeds 10%, and as zero otherwise. However, they find no relation between these two variables. This study extends that of Peasnell *et al.* (2005) by introducing additional measurements for UK firms. Consistent with Peasnell *et al.* (2005), blockholders ownership (BLOCK10) is calculated as an indicator variable taking the value of one if the firm has an external stockholder owning 10% or more of the outstanding shares, and zero otherwise. These measures have an exception that, if an internal or external director has a higher ownership than the blockholders, the latter is excluded from this category because another party can overcome and control the blockholders' power.

Company annul reports provide the necessary data to populate the blockholders ownership variables. In the UK, any entity that holds more than 3% of interest in the firm has to be disclosed in the annual report in accordance with sections 198 to 208 of the Companies Act 1985. Thus, the following hypothesis is proposed:

H12: A blockholding of 10% or more in a firm is negatively related to earnings management.

5.3.2.4 Audit Committee Effectiveness

The use of an audit committee is an important part of the decision control system for internal monitoring by boards of directors (Fama, 1980 and Fama & Jensen, 1983). Monitoring is performed by external audit (Anderson *et al,*. 1993), audit committees (Pincus *et al*., 1989 and Bradbury, 2006) and the use of NEDs (Fama, 1980 and Anderson *et al*., 1993).

The audit committee plays a significant role in the monitoring process carried out by the directors of the firm and auditing is used by firms to reduce agency costs (Jensen and Meckling, 1976; Watts and Zimmerman, 1986). Kesner (1988) and Vance (1983) maintain that most essential board decisions originate at the committee level, and this includes the audit committee.

Recent regulations and recommendations emphasise audit committee effectiveness. The UK Corporate Governance Code (2003) recommends the formation of an independent and active audit committee with financial experts. The Blue Ribbon Commission Report on improving the effectiveness of corporate audit committees (BRC, 1999) issued a set of ten recommendations intended to enhance the independence and effectiveness of audit committees. Additionally, the SEC requires firms to disclose their audit committee's membership and activities. Such regulations and recommendations are expected to improve the effectiveness of audit committees in ensuring the integrity of the financial reporting process.

The UK Corporate Governance Code (2003) emphasises that the audit committee should review the significant financial reporting issues and judgments made in preparing the company's financial statement. This view is supported by the academic argument that audit committees aim to increase the integrity of the financial auditing process (Klein, 2002a) and the quality of financial reporting (McMullen and Raghunanadan, 1996).

This study will examine the audit committee characteristics recommended by the UK Corporate Governance Code (2003) on earnings management, namely, audit committee independence, competence, size and frequency of meeting.

Audit Committee Independence

An audit committee should be independent from management in order to be able to conduct effective monitoring, resulting in less opportunistic management behaviour, such as EM. The quality and credibility of financial reporting can be badly affected when the audit committee has low or no independence.

The UK Corporate Governance Combined Code (2003, p.17) emphasises the audit committee's independence from managers, as follows: "while all directors have a duty to act in the interests of the company, the audit committee has a particular role, acting independently from the executive, to ensure that the interests of shareholders are properly protected in relation to financial reporting and internal control".

Vicknair *et al*. (1993) argue that, in order to function effectively, audit committees must be independent of the management as this allows both the internal and external auditors to remain free of undue influences and interferences from corporate executives. Similarly, Choi *et al*. (2004) find that, when members of the audit committee hold shares in their firm, they are less effective in mitigating earnings management. Thus, the independence of the audit committee is a key factor in enhancing its role in preventing mis-statements in the financial statements.

Additionally, the UK Corporate Governance Code (2003, p.16) articulates that "The board should establish an audit committee of at least three, or in the case of smaller companies, two members. All members of the committee should be independent non-executive directors."

Some prior studies outside the UK have documented the negative relation between audit committee independence and EM, measuring audit independence as the percentage of independent directors sitting on the audit committee (e.g. DeFond and Jiambalvo, 1991; Beasley, 1996 and Bradbury, 2006).

Therefore, in this study, audit committee independence (AUDITIND) is calculated as the number of independent non-executive directors on the audit committee compared to the total number of committee members. Due to the varying size of audit committees, a percentage variable provides a more comparable proportionate method of measurement.

Additionally, while this variable could be measured in a dichotomous manner, for example, depicting whether or not at least the majority of the committee are considered independent, or whether or not the audit committee is fully independent (both have been used in prior studies), it is

believed that the scale type variable used in this study gives greater precision in tests. This discussion leads to the following hypothesis:

H13: Audit committee independence is negatively associated with earnings management.

Audit Committee Financial Experts

A recently introduced measure to evaluate the audit committee's competence is the audit committee's expertise; this merges independence and expertise using the percentage of independent directors with financial experts sitting on the audit committee.

The UK Corporate Governance Code (2003 p.16) introduced audit committee expertise as a new recommendation stating that, "The board should satisfy itself that at least one member of the audit committee has recent and relevant financial experience." The Code defines a financial expert as someone who has a professional qualification from one of the professional accountancy bodies (Smith Guidance, p. 50).

This study defines a financial expert as an independent director who holds a recent professional financial qualification such as CPA, CMA or ACCA.

These experts can be used by the other independent members of the board to help them make judgements on professional issues; the independent director with no financial background may be a well-intentioned monitor, but financial sophistication is often required to identify financial irregularities such as earnings management. Xie *et al*. (2003) support this argument by arguing that an independent director with a corporate or financial background is likely to be more familiar with the different forms of earnings manipulations.

In this study, the personal details provided in the corporate governance report section of company annual reports are scrutinised to establish which, if any, of the audit committee members qualified as an expert.

Chtourou *et al*. (2001), Choi *et al*. (2004), Abbott *et al*. (2004), and Bédard *et al*. (2004) show that the presence of at least one member with financial expertise sitting on the audit committee is negatively related to the level of earnings management.

Yermack (2006) finds share price reactions to be sensitive to directors' professional qualifications, particularly in the area of accounting and finance, while DeZoort and Salterio (2001) find that disputes between the auditor and management are more common when audit committee members lack financial expertise. DeFond *et al*. (2005) find that the market reacts positively to the appointment of a financial expert with prior accounting experience but has no reaction to the appointment of a non-accounting financial expert. Their definition for a non-accounting financial expert is a CEO or president of a for-profit corporation.

Consistent with the previous studies, this research measures audit committee competence (AUDEXP) using a dummy variable that takes the value of one if at least one independent financial expert sits on the audit committee, and zero otherwise. This discussion leads to the following hypothesis:

H14: The presence of audit committee financial experts is negatively associated with earnings management.

Audit Committee Size

Some studies, such as those of Lipton and Lorsch (1992), Jensen (1993) and Yermack (1996), suggest that the number of members on an audit committee affects its decisions. Bédard *et al*. (2004) argue that the larger the audit committee, the more likely it is to uncover and resolve potential problems in the financial reporting process because it is likely to provide the necessary strength and diversity of views and expertise to ensure effective monitoring. Moreover, Chen and Zhou (2007) find that firms with a larger audit committee are more concerned about the auditors' reputation and tend to assign the Big 4 auditors. Empirical evidence shows that the Big 4 auditors are assigned as higher quality suppliers of auditing services. Braiotta (2000) explains that the audit committee should be large enough to have members with a range of professional judgment and

experience but not so large as to be unwieldy. The audit committee needs considerable director resources to deal with the complexity of the accounting and financial matters.

Small audit committees that have only one or two members are seen as weak; it is easy for management to put pressure on a small committee to gain its support in any dispute with the auditor. However, convincing a larger number of people with different backgrounds may be a more difficult task.

The UK Corporate Governance Code (2003) recommends that the board should establish an audit committee with at least three independent directors. Empirical studies provide mixed evidence on the impact of audit committee size on earnings management. Xie *et al*. (2003) and Bédard *et al*. (2004) find no significant association between audit committee size, measured by the number of directors on the committee, and earnings management. Similarly, Abbott *et al*. (2004) find no impact of audit committee size on earnings restatement. On the other hand, Lin *et al*. (2006) find that audit committee size is negatively related to earnings management, implying that a certain minimum number of audit committee members may be relevant to the quality of financial reporting.

This study expects firms that commit more directorial resources to their audit committee (in the form of a sizable audit committee) are less prone to management opportunistic behaviour. In this study, audit committee size (AUDSIZE) is calculated simply as the number of members reported by the company's corporate governance report and it is expected that a larger size will have a negative association with EM. Therefore, the following hypothesis is proposed:

H15: Audit committee size is negatively associated with earnings management.

Audit Committee Meetings

The establishment of an audit committee is meant to ensure continuous communication between external auditors, internal auditors and the board, where the committee meets regularly with the auditors to review the financial statements and audit processes as well as the internal accounting systems and controls.

The frequency of meetings indicates an active audit committee that devotes time to rectifying any immediate issues and offers a better review and oversight environment, which, in turn, may assist in detecting earnings management.

Earlier studies consider the frequency of audit committee meetings as an indicator of the level of diligence exercised by the audit committee members. Diligent audit committees enhance the level of oversight, resulting in improved financial reporting quality. Klien (2000) supports this argument by stating that the audit committee's primary function is to oversee the financial reporting process. It achieves this goal by meeting regularly with the firm's outside auditors and internal financial managers to review the corporation's financial statements, audit process, and internal accounting controls.

The importance of audit committee meetings as a sign of diligence is acknowledged by (The UK code, 2003, p.17) Corporate Governance Code that says, "It is recommended there should be not fewer than three meetings during the year".

Xie, *et al*. (2001) argue that audit committee meeting frequency is associated with reduced levels of discretionary current accruals and expect that more active audit committees will be more effective monitors. Beasley *et al*. (2000) find that firms with fraud records had fewer audit committee meetings than those without fraud records. However, Spira (1999) concludes that audit committees meetings are largely ceremonial and that they are largely ineffective in improving financial reporting.

As with earlier research, this study uses the number of audit committee meetings (AUDMEET) to indicate the level of diligence exercised by its members. Company corporate governance reports disclose the number of meetings held each year by the audit committee. This discussion leads to the following hypothesis:

H16: The number of Audit committee meetings is negatively associated with earnings management.

5.3.2.5 External Audit Factors

Auditor independence (Non-Audit Fees)

Watts and Zimmerman (1983) define auditor independence as the probability of an auditor reporting a discovered breach in the financial reports. This implies that auditor independence is synonymous with auditor objectivity and the ability to withstand client pressure to assent to substandard reporting.

The contractual relationship between the owner (principal) and the manager (agent) is modelled by the agency theory (Jensen & Meckling, 1976). The auditor is hired by the owner to produce information used in contracting with the manager (Antle, 1982; Watts & Zimmerman, 1986). Thus, the auditor is deemed to be an agent and is assumed to behave to maximise expected value, while taking investigative acts and rendering reports under conditions of moral hazard. The moral hazard exists because the auditor acquires information about audit quality that is not observable by the client (Antle, 1982).

As a result, the auditors could, for example, decide to decrease efforts in carrying out the audit to decrease audit costs or give up their independence and accept side-payments from management for not reporting truthfully, as the owner expects. In cases where auditors accept such side-payments, their independence is impaired. Consulting services that generate non-audit fees could be used to give side-payments a legitimate appearance (Antle, 1984).

Jensen and Meckling (1976) posit that managers of companies hire independent auditors to cut agency costs. This view is endorsed by Watts and Zimmerman (1983) who report that about 85% of New York Stock Exchange (NYSE) companies voluntarily hired independent auditors in 1926, several years before the Securities Acts mandated external auditing. Thus, the appointment of independent auditors has both theoretical and empirical support as a mechanism to reduce agency costs.

However, when auditors perform non-audit services, they are employed by the client. Hence, a conflict of interest may arise when the assigned auditor, whose job is to monitor management and

their behaviour on behalf of the shareholders, is employed, by the same management he is monitoring, to conduct consulting services that generate revenue for the auditor. Auditors that provide consulting services to their audit clients are also actually auditing information that is influenced by their recommendations. Auditors that provide consulting services may also give management advice on taxes, depreciation and impairment while, simultaneously, assuring shareholders on the integrity of financial statements.

Regulators are concerned about two effects of non-audit services provided by auditors. First, non-audit service fees can make auditors financially dependent on their clients. Regulators believe that auditors become financially dependent on their clients if the non-audit services fees are higher than the audit fees. Regulators fear that auditors will perceive that the benefits of sacrificing their independence in order to retain significant clients outweigh potential costs, such as reputation loss and litigation expenses. As a result of this economic bonding, they are less likely to face management pressure for financial misreporting (DeAngelo 1981).

The second effect is the consulting nature of non-audit services, which places auditors in managerial roles and, thus, potentially threaten their objectivity about the work they audit (Kida 1980). The relation between the provision of NAS and the auditor independence, both in appearance and in mind, is well documented in the previous auditing literature (e.g. Jenkins & Krawczyk, 2002; Francis & Ke, 2004; Chien & Chen, 2005; Krishnan *et al*. 2005; Mishra *et al*., 2007).

Most of the prior studies report a negative effect of NAS on perceived independence. Independent auditors play an essential role in decreasing managers' opportunistic behaviour. Mautz & Sharaf (1961) suggest that, if auditors are not perceived as independent, financial statements are perceived as more doubtful and thus social costs are incurred. Ashbaugh *et al*. (2003) argue that NAS captures the economic dependence of the client and the relative value of NAS in relation to total fees paid to the auditor. Frankel *et al*. (2002) find that the ratio of non-audit fees to total fees as a measure of auditor independence has a positive relationship with discretionary accruals.

Additionally, it is argued that audit fees are more likely to reflect auditing efforts, which in turn produce better accrual quality. Consequently, a positive association between audit fees and accrual

quality is expected. Empirically, several studies have documented a positive relation between audit fees and earnings management. Gul *et al*. (2003) examine these linkages using 648 Australian firms, and their results show that there is a positive association between earnings management and audit fees. Many other previously quoted empirical studies suggest a positive association between audit fee and accrual quality (e.g. Frankel *et al*., 2002; Ashbaugh *et al*., 2003; Antle *et al*., 2006; Srinidhi *et al*., 2007).

The former studies mainly use two measures of audit and non-audit fees, namely. the natural logarithm of each set of fees and the ratio of each set of fees to total fees (Frankel *et al*., 2002; Ashbaugh *et al*., 2003; Ferguson *et al*., 2004; Reynolds *et al*., 2004; Huang *et al*., 2007).

The *Companies Act 1989 (Disclosure of Remuneration for Non-audit Work) 1991 Regulations* requires UK companies (other than small and medium-sized ones) to disclose, in a note to their annual accounts, the remuneration paid to their auditors for non-audit work, separately from the audit fees. Therefore, in this study, non-audit fees and audit fees data are collected directly from firms' annual reports rather than from other electronic sources, such as FAME. This ensures the highest accuracy and the highest consistency with this study's other corporate governance variables collected from the same annual reports. It also facilitates a precise judgment on the complex classifications of various types of fees. This discussion leads to the following two hypotheses:

H17: Higher Non-audit fees are positively associated with earnings management
H18: Higher Audit fees are negatively associated with earnings management

Audit Quality: Industry Specialised Auditor

DeAngelo (1981) defines audit quality as the joint probability of the auditor discovering, observing and reporting financial statement errors. As demonstrated in the previous chapter, the use of big name auditors as a proxy for auditing quality may need to be reconsidered because the literature reveals conflicting results without plausible explanations.

Another reason for the need to narrow the audit quality measurement is that the Big 4 audit firms now dominate the auditing market. In this study, using another proxy for audit quality is essential as the Big 4 auditors audit more than 98 percent of firms in this research sample, which may destroy the statistical reliability of the results.

This study would face a similar problem if it used auditor opinion as an audit quality measurement because the study sample includes very few cases of auditors issuing qualified opinions. There are less than ten instances of an auditor issuing an unclean audit report in the sample for the period 2003-2006. Thus, testing qualified audit reports as a measure of audit quality is also statistically unreliable and is thus rejected for use in this study.

Another measure of audit quality presented in the prior research is auditor rotation. In this study's sample, there are 36 cases of firms switching to another auditor, which represents about 8% of the sample observations. This test may be more powerful than the previous measures but it is still not very reliable. However, in this study, this test will be conducted as a sensitivity analysis.

Some studies narrow the audit quality measurement to an auditor's industry specialisation and find more logical and consistent results (e.g., Craswell *et al.*, 1995 and Beasley and Petroni, 2001). Prior studies use several different proxies to measure auditor industry specialisation because this is not directly observable. Market share is the most frequently used proxy, based on the assumption that industry expertise is built by repetition in similar settings.

The market share approach defines an industry specialist as an audit firm that has differentiated itself from other audit firms in terms of its market share within a specific industry. The assumption is that the firm with the largest market share has developed the largest knowledge base within that particular industry. Moreover, a significant market share within an industry can reflect a highly sophisticated industry-specific audit technology that, in turn, leads to higher audit quality. Using market share as a proxy for auditor industry specialisation represents industry superiority over other auditors. The higher the market share, the more industry expertise the auditor has compared to its competitors. Mayhew and Wilkins (2002) note that having a high market share implies that the auditor successfully differentiates itself from its competitors in terms of audit quality.

It is reasonable to speculate that an industry specialist auditor (SPAUD) has a positive incremental impact on the quality of financial reports relative to a non-specialist auditor. Previous studies that measure the specialised auditor by market share provide support for that view (e.g. Balsam *et al*., 2000; Gramling *et al*., 2000; Carcello and Nagy, 2002). Additional evidence reveals that clients of industry-specialist audit firms are ranked higher in terms of disclosure quality by financial analysts (Dunn and Mayhew, 2004).

Furthermore, the extended literature provides evidence that clients of non-specialist auditor's report higher absolute discretionary accruals than the discretionary accruals reported by clients of specialist auditors (e.g., Balsam *et al*. 2003; Krishnan, 2003). Overall, these studies suggest that both firms and users may benefit when firms hire industry specialist auditors because the specialised auditor enhances the accounting and auditing quality.

However, using market share as a measure of specialisation has some limitations (Gramling *et al*., 2001; Krishnan, 2001). For example, there is ambiguity about whether the advantages of specialising in an industry accrue from auditing a large number of clients or a few large clients.

The portfolio share ratio is an alternative to the industry market share ratio. It is not used in this study because it is highly correlated with industry size and it tends to ignore smaller industries (Neal and Riley, 2004). In addition, studies using the portfolio approach tend to lack variation in industry expertise when companies are matched on size and industry because industry size is highly correlated with this measure (Stanley *et al*., 2007).

To address these shortcomings, this study uses two proxies to measure auditor industry specialisation. First, similar to prior studies by Balsam *et al*. (2003), Carcello and Nagy (2004), Krishnan (2003), Dunn and Mayhew (2004) and Lim *et al*. (2008), industry market share is calculated for each audit firm as the revenue from audit clients within a specific industry divided by the total revenues of all audited companies within that industry.

The second measure, following Mayhew and Wilkins (2003), is the number of clients in a specific industry audited by the same auditor. For the sake of comprehensiveness, such a base avoids the

bias towards large clients that is implied by using sales as the base, as in the previous measure. Thus, if the auditor has a number of small clients in the same industry and has developed the knowledge base to be a specialist, this is captured by the number-of-clients measure but not by the market share measure. This discussion leads to the following hypothesis:

H 19: Firms that are audited by a specialised auditor have less earnings management

5.3.3 Measurement of the Control Variables

In addition to the independent variables discussed above, a number of control variables are included in this study to control for firm characteristics that can influence the extent of EM. The inclusion of non-corporate governance variables to control for other company characteristics that can influence the EM is considered fundamental to ensuring that the tests focus more precisely on the differences created by variations in corporate governance. As this study aims to determine whether or not there is a relation between both corporate governance attributes and external audit factors and the incidence of EM, it is essential that other factors that influence EM are also controlled.

It is difficult to control for some incentives to engage in EM behaviour, such as management style, integrity and corporate culture because they are problematic to measure (Archambeault, 2002). The review of prior research determines that, among the various measurable incentives, six variables are of particular relevance to this study.

These six control variables are firm size, firm performance, leverage, firm growth, cash flow from operations and International Financial Reporting Standards (IFRS). Below, these control variables are considered individually, along with the method of measurement for each variable. However, no prediction is made for the coefficient sign.

Firm Size

Booth *et al*. (2002) and Peasnell *et al*. (2005) suggest that internal governance structures are substitutable and firms can choose a governance practice that is right for them. This implies that

firms of different size may need different corporate governance structures and that small and large firms are not necessarily similar in their corporate governance structures.

Boone *et al*. (2007) find that, as firms become larger and more diversified, the size of the board increases. Firm size is, therefore, taken as a proxy for the complexity of the firm (Fama & Jensen, 1983; Booth & Deli, 1996). Dalton *et al.* (1998) find that board size has a greater impact on small firms than on large firms. Similarly, Lehn *et al.* (2004) find that board size is positively related to firm size but negatively related to growth opportunities.
Thus, the scale and complexity of a large firm can obscure any relationship between board characteristics and EM. As the firm's size increases, the agency costs are expected to increase and allow for greater managerial discretion and opportunism (Jensen & Meckling, 1976).

In addition, it is argued that larger firms have more potential for earnings management (e.g. Bartov, 1993). Watts and Zimmerman (1990) state that larger firms face higher political costs and hence have stronger incentives to manage earnings in order to reduce the potential political risk. Pincus and Rajgopal (2002) suggest that large firms have more pressure placed on their management to report more predictable earnings. Lobo and Zhou (2006) note that large firms may have more opportunities to manipulate earnings because of the complexity of their operations and the difficulty for observers to understand such complex activities

Thus, the size of the firm is likely to affect various characteristics of corporate governance and earnings quality. Hence, in this study, firm size (SIZE) is included as a control variable to examine the relationship between both corporate governance characteristics and external audit factors and EM. Firm size is measured as the natural logarithm of total assets at the year-end as in many previous studies (e.g. Jaggi *et al*., 2009; Machuga and Teitel, 2009 and Dimitropoulos and Asteriou 2010). The information required to populate the variable is sourced from DataStream.

Firm Performance

For the purpose of this study, an accounting based measure is used to control for the firm's performance by using the return on assets (ROA). ROA is used in many studies on both EM and

corporate governance (e.g. Kothari *et al*., 2005; Kiel & Nicholson, 2003; Carter *et al*., 2003). ROA is an indicator of the management's ability to efficiently utilise corporate resources (assets) that ultimately belong to shareholders. Furthermore, Carter *et al*. (2003) find that ROA is highly significant in explaining Tobin's Q and the firm's value. Thus, ROA can be considered as a robust measure of firm performance.

In this study, following Ashbaugh, *et al*. (2003), ROA is calculated as net income divided by the total assets at the beginning of the testing period. The information required to populate the variable is sourced from DataStream.

Firm Leverage

Leverage represents the debt structure of a company and is used in numerous studies to proxy for a debt covenant violation (Efendi *et al*., 2007; Erickson *et al*., 2004 and Elayan, *et al*. 2008). Leverage is found to be positively correlated with EM practice, as understating liabilities or overstating assets may be used to avoid debt covenant violations. Efendi *et al*. (2007) suggest that when a firm is close to default on accounting-based debt covenants, the management may mis-state the accounting numbers to avoid the consequences of default.

Other studies, such as those of Dechow *et al*. (1996), Richardson, Tuna, & Wu (2002) and Person (2005) link leverage with EM, financial restatements and fraud respectively. Jiang *et al*. (2008) suggests that leverage changes may have differing impacts on earnings management. DeFond and Jiambalvo (1994) present evidence that managers of highly leveraged firms have incentives to make income increasing discretionary accruals to avoid a debt covenant violation.

However, Becker *et al*. (1998) find that leverage is negatively associated with the absolute value of discretionary accruals. These studies indicate that increased leverage may provide an incentive that fosters EM. In the literature on corporate governance and EM, leverage is widely used as a control variable (e.g. Becker *et al*., 1998; DeAngelo *et al*., 1994; Gul and Tsui, 2001; Agrawal and Knoeber, 1996; Jelinek, 2007; Jiang *et al*., 2008 and Dimitropoulos and Asteriou 2010).

Taking the above into account, this study considers that the incentive to manage earnings with the aim to avoid a debt covenant violation needs to be controlled by including a variable that measures leverage. Following these prior studies, debt reliance is represented by the level of leverage. Leverage (LEV) is calculated as total long-term debt divided by total assets. The information required to populate the variable is sourced from DataStream.

Firm Growth

Consistent with a number of earlier studies (Carcello *et al*., 2004; Abbott *et al*., 2004; Abbott *et al*., 2000; Beasley, 1996 and Dimitropoulos and Asteriou 2010), this study controls for the effect of company growth. It is essential to control for a firm's pace of development because, in times of rapid growth, a company may experience pressure to maintain or exceed anticipated growth rates. The pressure to achieve a targeted rate of growth, or alternatively to mask downturns, may create an incentive for management to engage in EM (Carcello *et al*. 2004).

Skinner and Sloan (2002) find evidence that growth stocks have significantly greater negative market responses to earnings disappointments than do value stocks. This result implies that growth firms have greater incentives to avoid negative earnings surprises.

Furthermore, Matsumoto (2002) documents that a rapidly growing firm is more likely to manage earnings. Among other studies that find growth is related to EM are those of Abdularahman and Ali (2006); Huang *et al.* (2008) and Dimitropoulos and Asteriou (2010).

Based on Myers' (1977) and Gaver *et al*., (1995) definition of growth opportunities as the difference between a firm's value and existing assets, this study measures growth (GROWTH) as the market-to-book assets ratio (MTB). MTB utilises the market value of assets as a proxy for a firm's value and the book value of assets as a proxy for existing assets. A higher MTB represents greater growth opportunities. The information required to populate the variable is sourced from DataStream.

Cash Flows from Operating Activities (CFO)

This study also controls for the effect of cash flows from operating activities (CFO) to capture performance differences across firms in different industries and to control for the effect of economic activity on earnings management. Another reason to use CFO is to control for the association between abnormal accruals and operating cash flows.

Jiang *et al*. (2008), Lobo and Zhou (2006) and Becker *et al*. (1998) note that firms with a strong operating cash flow performance are less likely to manage discretionary accruals upwards because they are already performing well. Conversely, firms with a low operating cash flow are more likely to manage discretionary accruals downwards. Dechow *et al*. (1995) shows that CFO influences the magnitude of discretionary accruals, and higher CFOs are associated with lower discretionary accruals.

Consistent with prior research, such as that of Peasnell *et al*. (2005), this study defines CFO as cash flows from operating activities divided by total assets at the beginning of the period. The information required to populate the variable is sourced from DataStream.

International Financial Reporting Standards (IFRS)

Since 2005, almost all publicly listed companies in Europe are required to prepare financial statements in accordance with IFRS (Regulation (EC) No. 1606/2002). This study sample covers the period from 2003 to 2006; hence, firms that reported in 2003 and 2004 are considered pre-IFRS firms, whereas firms that reported in 2005 and 2006 are considered post-IFRS firms. IFRS has had a large affect on company measurement and reporting methods, as documented by previous research.

Ball *et al*. (2000) show that the impact of accounting standards on the valuation of assets and liabilities and the recognition of costs and revenues still differs widely across countries. Moreover, IFRS adoption tends to increase the firm's market liquidity decrease its cost of capital and increase its equity valuation (Daske *et al*., 2008). Undoubtedly, this has a direct impact on earnings management.

Chen *et al*. (2001) compare reported earnings under Chinese GAAP with IFRS and conclude that reported earnings under Chinese GAAP are 20-30 percent larger than the restated earnings under IFRS. Comparing the German GAAP with IFRS, Zimmerman and Gontcharov (2001) find that the level of earnings management is broadly the same. No study has compared the difference in earnings management between UK GAAP and IFRS; therefore this study will examine this issue.
Barth *et al*. (2008) compare characteristics of accounting amounts for firms that adopt International Accounting Standards (IAS) to a matched sample of firms that do not, for a number of different countries. They find that in the post-adoption period, adopting firms show less earnings management, which suggests that firms applying IFRS generally exhibit an improvement in accounting quality between the pre- and post-adoption periods in terms of earnings management.

Dye (1993) finds that rigid accounting standards increase managers' ability to manipulate the accounts opportunistically and thus weaken the effectiveness of this type of standard. Ewert and Wagenhofer (2005) support this argument by finding that tighter accounting standards can increase rather than decrease the total earnings management. Similar results are documented by Nelson *et al*. (2002). They conduct a survey based study for more than 250 audit partners, investigating their experience with more than 500 earnings management attempts by their clients. They find a positive association between the precision of accounting rules and the structuring of transactions by a firm's managers. The structuring of transactions required by rigid accounting standards allows managers to violate specific provisions in some accounting standards.

Goodwin *et al*. (2009) examine whether a firm's corporate governance system affects how accurately the impact of accounting changes is reported to shareholders. They particularly focus on the relation between corporate governance measures and accounting forecast errors that arise with the adoption of IFRS by listed Australian firms. They reveal evidence that corporate governance mechanisms are associated with the likelihood and magnitude of managerial forecast errors.

Moreover, Duh *et al*. (2009) examine whether the International Accounting Standards (IAS) No. 36 "Impairment of Assets", which allows reversals of asset impairment losses, provides an opportunity for earnings management and whether a corporate governance mechanism can mitigate this

behaviour. Their results show that firms avoid an earnings decline in a subsequent period. They also find that an effective corporate governance mechanism could mitigate such behaviour.

The previous studies support the argument that the relation between EM and corporate governance can be affected by the introduction of IFRS. Therefore, this study introduces a dummy variable that takes the value of one if a firm uses IFRS, and zero otherwise.

5.4 Empirical Research Models

This research utilises two models to test the research hypotheses. There are several reasons that support this division. Firstly, the correlation coefficient associated with the independent variables BRDIND and AUDIND in one side and AUDIND and NOMIND in the other side is more than 75%, which indicates that multicollinearity can be a problem if all variables are included in the same model. This multicollinearity problem is common in this kind of research and many studies control it using different means. Examples of studies that find a high correlation between corporate governance variables are Klein (2002a), Xie, *et al*. (2003), Ramsay *et al*. (2006) and Benkel *et al*. (2006).

As pointed out by Baum (2006), one way to solve this issue is to omit the collinear variables from the regression. Thus, to mitigate the multicollinearity problem, two models are established here following Xie *et al*.(2003) and Ramsay *et al*. (2006): one without audit committee variables (the board model) and one with the audit committee and external audit variables (the audit model), as in many recent studies, such as those of Lin *et al*. (2006); Lei (2007); Rainsbury *et al*. (2009) and Baxter and Cotter (2009).

Another reason for separating this study into two models is that some corporate governance research has argued that various governance mechanisms can substitute one another (Carcello *et al*., 2002; Rediker and Sith, 1995; Agrawal and Knoeber, 1996 and Boo and Sharma, 2008).

Carcello *et al*. (2002) investigate the relationship between corporate governance and audit fees. They replace the board of directors' attributes with audit committee' attributes (i.e. size, meetings

and expertise). Their results confirm a positive relationship between audit committee independence and audit committee expertise and audit fees.

On the other hand, previous studies of the interaction between audit committee attributes and external audit services often assume that they are complementary, and that improved governance is associated with higher audit fees, although the evidence for this is inconclusive. Hay *et al*. (2008) revisit this issue and examine whether the 'substitution' or 'complementary controls' views apply. They find that measures of internal auditing, corporate governance, and concentration of ownership are all positively related to audit fees, consistent with the complementary explanation.

Therefore, to avoid the potential substitution problem that may exist between boards of directors attributes and audit committee attributes, this study constructs a separate model for each set of attributes.

Finally, by separating this study into two models, it is possible to investigate the affect of the audit function on earnings management separately from the effect of board composition and ownership structures. The second model will study both audit committee characteristics that represent the internal governance mechanisms and external auditor independence and quality, which represent the external audit mechanisms. This approach is used by some recent studies, such as those of Lin *et al*. (2006), Lei (2007), Rainsbury *et al*. (2009) and Baxter and Cotter (2009). Therefore, the empirical models with the main variables of this study's tests are formed as follows. Details of all the variables and their alternative measures are presented in table 5.6 at the end of this chapter.

First Empirical Model:

DACj = γ *0* + γ*1* BRDIND jt + γ *2* BRDSIZE jt + γ *3* BRDMEET jt + γ *4* CHAIRCODjt + γ *5* CHAIRIND jt + γ *6* WOMEN jt + γ *7* NOMIND jt + γ *8* REMUIND jt + γ *9* NEDMEET jt + γ *10* NEDFEE jt + γ *11* MANGOWN jt + γ *12* INSTOWN jt + γ *13* BLOCK jt + γ *14* IFRS jt + γ *15*SIZE jt +γ *16* LEV jt + γ *17* GROWTH jt + γ *18* CFO jt + γ *19* ROA jt

DAC	Absolute value of the discretionary accruals estimated by the Kaothari, *et al*. (2005) model.
	Board Composition:
BRDIND	The proportion of independent non-executive directors to total board

	members.
BRDSIZE	The number of directors in the board.
BRDMEET	The number of board meetings held annually by the board of directors.
CHAIRCOD	A dummy variable that takes the value of one if the chairman is independent according to the chairman independence criteria recommended by the Code, and zero otherwise.
CHAIRIND	A dummy variable that takes the value of one if the chairman is independent according to the NEDs independence criteria recommended by the Code, and zero otherwise.
WOMEN	The percentage of female directors to total board members.
NOMIND	The proportion of independent non-executive directors in the nomination committee to total committee members.
REMUIND	A dummy variable that takes the value of one if the remuneration committee is composed entirely of independent directors, and zero otherwise.
	***NEDs' Commitment**:*
NEDMEET	A dummy variable that takes the value of one if NEDs meet with chairman without the presence of the executive directors, and zero otherwise.
NEDFEE	Total fees paid to NEDs divided by the total number of NEDs.
	Ownership Structures:
MANGOWN	The percentage of total shares held by executive directors divided by the total number of shares.
INSTOWN	The average percentage of shares outstanding owned by institutional investors*:*
BLOCK	A dummy variable taking the value of one if the firm has an external stockholder owning 10% or more of the outstanding shares, and zero otherwise.
	Control Variables:
LEV	Total long-term debt divided by total assets.
GROWTH	Market-to-book ratio.
SIZE	The natural logarithm of total assets at year-end.
CFO	Cash flows from operating activities divided by beginning of period total assets.
ROA	Net income divided by the total assets at the beginning of the year.
IFRS	A dummy variable that take the value of one if a firm uses IFRS, and zero otherwise.

Second Empirical Model:

DACj = γ *0* + γ*1* NAF jt + γ *2* AF jt + γ *3* SPEAUD jt + γ *4* AUDSIZE jt + γ *5* AUDMEET jt + γ *6* AUDIND jt$j$ + γ *7* AUDEXP jt + γ *8* MANGOWN jt + γ *9* IFRS jt + γ *10* SIZE jt +γ *11* LEV jt + γ *12* GROWTH jt + γ *13* CFO jt + γ *14* ROA jt

DAC	Absolute value of the discretionary accruals estimated by the Kaothari *et al*. (2005) model.
	External Auditor Factors:
NAF	The natural logarithm of non-audit fees
AF	The natural logarithm of audit fees
SPEAUD	A dummy variable that takes the value of one if the firm is audited by a specialised auditor, and zero otherwise.
	Audit Committee Characteristics*:*
AUDSIZE	The total number of members on the audit committee.
AUDMEET	The yearly number of audit committee meetings.
AUDIND	The proportion of independent non-executive directors in the audit committee to total committee members.
AUDEXP	A dummy variable that takes the value of one if at least one independent financial expert sits in the audit committee, and zero otherwise.
	Control Variables:
MANGOWN	The percentage of total shares held by executive directors divided by the total number of shares.
LEV	Total long-term debt divided by total assets.
GROWTH	Market-to-book ratio.
SIZE	The natural logarithm of total assets at year-end.
CFO	Cash flows from operating activities divided by beginning of period total assets.
ROA	Net income divided by the total assets at the beginning of the year.
IFRS	A dummy variable that take the value of one if a firm uses IFRS, and zero otherwise.

5.5 Sample Selection and Data Collection Procedures

5.5.1 Sample Selection

This study covers four years of reporting periods from November 2003 to December 2006. There are several reasons for this choice. Firstly, this study uses The UK Corporate Governance Code (2003) as a guide for corporate governance variables and this Code has been effective since November 2003. Secondly, the introduction of the International Financial Reporting Standards (IFRS) in 2005 makes it possible to compare the effect of these standards on the quality of financial reporting by comparing the pre-IFRS period that covers years 2003 and 2004 with the post-IFRS period that covers years 2005 and 2006. Thirdly, due to the large amount of data that has to be hand-collected for the corporate governance variables, limiting the study period to four years makes that task viable.

The initial sample for this study is the FTSE 350 Index, which is the top 350 UK listed firms by total market capitalisation. Targeting the FTSE 350 firms ensures both statistical power in the tests and maximum data availability. Furthermore, all FTSE 350 firms implement corporate governance mechanisms recommended by the UK Corporate Governance Code (2003) to the same level, whereas medium and small firms have a lower level of corporate governance recommendations. For instance, (the UK Code, 2003, p.9) states that "The board should establish an audit committee of at least three, or in the case of smaller companies, two members, who should all be independent non-executive directors".

Financial, regulated and mining industries (see table 5.1) are then excluded from the initial sample. The reasons for excluding these industries are as follows.

Compared to other industries, regulated industries have an incentive to adopt conservative accounting practices and to defer income recognition because their revenues are set on fixed accounting rates of return. Therefore, capturing management's opportunistic manipulations is difficult. Financial companies are omitted because their special accounting practices mean that the discretionary accruals model does not apply to them, as illustrated in previous empirical studies (e.g. Peasnell *et al*., 2000b; Chtourou *et al*., 2008). Companies in the mining industry are excluded

because of their different practice of income recognition and because the market value of mining firms differs from that of other firms as it includes other major factors, such as the value of any real operating options (Brennan and Schwartz, 1985).

Table 5.1 Sample size and selection procedures for the study period.

Description	**2003**	**2004**	**2005**	**2006**	**Pooled**
Initial sample (FTSE 350)	283	350	350	350	1333
Excluded:					
Financial, insurance and investment companies	(46)	(64)	(66)	(69)	(244)
Mining and regulated companies	(19)	(21)	(21)	(22)	(83)
Missing annual reports or shorter than 12 months fiscal y	(28)	(22)	(17)	(11)	(78)
Missing corporate governance data	(65)	(54)	(46)	(40)	(205)
Missing DataStream information	(37)	(29)	(24)	(21)	(112)
Industries smaller than 6 firms	(31)	(21)	(26)	(20)	(98)
Outliers	(9)	(11)	(9)	(13)	(42)
Final sample for first model	**48**	**128**	**141**	**154**	**471**
Missing audit fees data	(8)	(6)	(6)	(3)	(23)
Final sample for second model	**40**	**122**	**135**	**151**	**448**

This study includes industries with sufficient firm observations to ensure unbiased estimation. Therefore, industry groups with less than six observations are also excluded from the sample, following prior research (DeFond and Jiambalvo, 1994; Subramanyam, 1996a).

Moreover, extreme outliers are dropped from the sample due to the regression sensitivity to them. Firms with extreme values for earnings management are not excluded from the sample as outliers because these are potentially the observations that represent large negative accruals (e.g., big bath), or large positive accruals, which may actually represent management discretion. If extreme discretionary accrual observations were deleted, it may eliminate the firms that practise earnings management, which is the focus of this study. However, following Li (2007), the observations in the top and bottom 0.5 percent of the distribution of some variables such as operating income, total assets and cash flow from operations are deleted to mitigate the effects of outliers.

Missing corporate governance variables are mainly due to the lack of disclosure by some of the sample firms of both non-executive directors meetings and information about chairman independence.

The final usable sample is 471 firm years for the first model. Then, some firms were also excluded because they do not provide clear details of audit and non-audit fees. Thus, the final usable sample for the second model is 448 firm years.

Table 5.2 indicates that the firms are normally distributed from an industry perspective. The Construction & Building Materials, Restaurants Pubs & Breweries and Media & Photography industries, collectively, account for one third of the sample. The other thirteen industries each represent from 4% to 8% of the total sample.

It should be noted that, in order to calculate earnings management accurately, industries that contain less than six firms are excluded, except in cases where such an industry shares some characteristics with another industry. In those cases, this research combines the two industries under the name of the larger industry. For example, the Travel & Leisure industry is combined with the Leisure, Entertainment & Hotels industry; the Food & Drug Retailers industry is combined with the General Retailers industry.

5.5.2 Data Collection

Data on corporate governance variables is hand collected from the 2003, 2004, 2005 and 2006 annual reports for each firm (source: Northcote). The process involves an examination of the directors' profiles and the corporate governance report to identify the independence and the activity of the board subcommittees and their members.

Audit independence and quality data are also collected from each firm's annual reports to ensure the maximum accuracy and comparability with corporate governance data. Earnings management is calculated based on data collected from the DataStream. Data for the control variables group are also collected from the DataStream.

Table 5.2	Industry Distribution of the Sample			
	First Model		Second Model	
Industry group	**Number**	**Percentage**	**Number**	**Percentage**
Aerospace & Defence	28	0.06	26	0.06
Business Support Services	20	0.04	20	0.04
Chemicals	19	0.04	17	0.04
Computer Software & Services	23	0.05	20	0.04
Construction & Building Materials	44	0.10	41	0.09
Distributors	26	0.06	24	0.05
Electronic & Electrical Equipment	27	0.06	26	0.06
Engineering & Machinery	19	0.04	19	0.04
Food Producers & Processors	24	0.05	21	0.05
General Retailers	35	0.08	31	0.07
Health	18	0.04	18	0.04
Leisure Entertainment & Hotels	31	0.07	31	0.07
Media & Photography	39	0.09	37	0.08
Support Services	33	0.07	33	0.07
Transport	17	0.04	17	0.04
Restaurants Pubs & Breweries	43	0.10	42	0.09
Total	471	100%	448	100%

5.6 Analytical Procedures

This section will discuss the statistical methods employed for data analysis. The statistical methods for analysing data are classified into two broad categories: one is parametric and the other is non-parametric. In general, the nature and characteristics of the study data will determine which method should be used.

Gujarati (2003) suggests four critical assumptions that must be met before utilising parametric tests:
1) Assumption of normality. Under this assumption, samples must be drawn from normally distributed populations. A normal distribution is an idealised sample which is based on a population of an infinite number of cases and which takes the form of a bell or an inverted-U.

2) Assumption of Linearity. This assumption suggests that the model should have linear parameters.

3) Assumption of homoscedasticity. This assumption requires the variance or standard deviation of the dependent variable within the group to be equal.

4) Assumption of independence of error terms. Under this assumption the error terms are independent from one another and therefore no serial correlation exists.

In general, parametric tests are more powerful when all assumptions are met and when the variables under analysis are measured on at least an interval scale (Judge *et al*. 1985). However, if any of the previously mentioned assumptions are violated by the nature of data; non-parametric tests become more appropriate (Balian, 1982).

According to Judge *et al*. (1985), non-parametric statistical techniques can be considered as an alternative to the parametric techniques to avoid the need for making numerous assumptions, as is the case with parametric techniques. Non-parametric methods are deemed to be distribution free since they make no assumption with regard to the distribution of scores in the population. Also, non-parametric techniques do not require the measurement of data on an interval scale and do not require data to meet the stringent assumption of the normality and homogeneity of variance required by the parametric method.

Therefore, the assumptions of the parametric tests will be tested in the next chapter using Skewness-Kurtosis to check for the normality assumption, as suggested by Mark (2008). To test the homosedasticity assumption, the most common test is used, namely, visual inspection of the residuals. According to Mark (2008) the residuals are plotted in a graph against the independent variable that is suspected of causing the problem of heteroscedasticity. If the magnitude of the residuals seems to be related to the value of the independent variable, then there is a high possibility of heteroscedasticity. A numerical test of linearity (White, 1980) will also be conducted using STATA.

Finally, to test for multicollinearity, this study applies correlation coefficient and variance inflation factors (VIF) tests. The tolerance factor and variance inflation factor of each corporate governance

and external audit variables are calculated. A tolerance factor close to 0, and a value of the variance inflation factor greater than 10, shows the presence of multicollinearity in the models. Hair *et al*. (1998) and. Kennedy (2008) suggests that a VIF of more than 10 indicates harmful multicollinearity.

Given the above discussion, the previous various tests are conducted to test the data against the OLS assumptions. Non-parametric tests are adopted in this study to analyse the data. This is because the data of this study does not meet the conditions required for the parametric tests, as will be illustrated in the next chapter.

Under the violation of normality, OLS estimates are inefficient (Greene, 2007). The estimated standard errors are biased and inconsistent and, thus, the results' test statistics are biased and inconsistent (Baltagi, 2001; Greene, 2007). Provided that coefficients are constant over time, estimating using pooled regression becomes more efficient. Also pooled estimation is a simple way to examine the sensitivity of the results to alternative specifications (Beaver, 1998). The primary advantage of a pooled regression over a cross-section is that it allows for greater flexibility in modelling differences in sample specific behaviour (Greene, 2007).

Another reason for the preference of a GLS regression over pooled OLS regression is due to the important assumptions of homoscedasticity and no serial correlation in pooled OLS (Greene, 2007). For the estimator to be considered consistent and unbiased, pooled OLS requires the errors in each time period to be uncorrelated with the independent variables in the same time period. A GLS regression has the additional advantage that it corrects for the omitted variable bias, and the presence of autocorrelation and heteroskedasticity in pooled time series data.

In such circumstances, this research applies the pooled GLS (random effect) regression over the four-year test period. This methodology allows for the examination for variations among cross-sectional units simultaneously with variations within individual units over time (Baum, 2006). It assumes that regression parameters do not differ between various cross-sectional units and do not change over time, which strengthens the reliability of the coefficient estimates.

Random-effect versus Fixed-effect

There are two basic approaches used to account for relationships within or between each cross-section (Baltagi, 2001). First, the least squares dummy variable (fixed effect) approach assumes that the individual constant is a group specific constant term in the regression model. Second, the generalised least squares (random effect) approach assumes that the individual constant is a group specific disturbance similar to the error term, except for each group (Greene, 2007). There is a trade-off between the efficiency of the random effect approach and the consistency of the fixed effect approach.

A common practice in economic research is to make the choice between both approaches based on the Hausman (1978) test. The Hausman specification test facilitates to the differentiation between random and fixed effects models by testing for correlation between the x variables and the individual random effects εi. Hausman test check for strict exogeneity. If no correlation is found, random effects should be employed but if correlation exists, fixed-effects should be employed. Thus, an essential assumption for selecting the random-effect estimation is that the unobserved heterogeneity should not be correlated with the independent variables.

In this study, following McKnight and Weir (2009) the Hausman test is used to check this assumption and to test the appropriateness of using the random-effects estimation. The insignificant result obtained from the Hausman test $\chi 2$ of 14.04 ($p = 0.27$) shows that the assumptions for the random effects estimation are not violated.

Despite the Hausman test, Johnston and DiNardo (1997, as cited in Gujarati and Porter, 2009), state that there is no simple role to navigate past the Scylla of fixed-effects and the Charybdis of measurement errors and dynamic selection; panel data does not offer a cure-all for an econometrician's problems. Nevertheless, for this study, the random effect approach is selected as a superior approach, based on the Hausman test and the following reasons.

Greene (2007) argues that the fixed effect approach may only be relevant to the cross-sectional firms in the tested sample and cannot be generalised outside that sample. In addition, Greene (2007)

suggests that when the cross-sectional firms sample is drawn from a large population, the individual specific constant terms can be viewed as randomly distributed across cross-sectional firms. In this study, the sample is drawn from a large population that consists of the UK FTSE 350 Index firms over four years, so Greene's view may apply.

Judge *et al*. (1985) argue that, when the number of time series data is small and the number of cross-sectional units is large, the statistical inference is conditional on the observed cross–sectional units in the sample. Hence, the choice of the random effect approach is preferable. This study covers four years of time series data and has a relatively large number of cross-sectional units, which make the random effect approach more appropriate. Moreover, the fixed effects approach uses a dummy variable to identify firms. This, in turn, would result in a large number of parameters relative to the number of observations. Thus, the power of the model would be weakened due to the loss of degrees of freedom.

Therefore, a pooled cross-sectional GLS (random effects) model is used to test the proposed relationships. Statistical analysis of the data is then performed using the computer programme, STATA. This package provides a platform where both univariate and multivariate testing methods can be applied to the research design utilised by this study.

In general, the major statistical techniques used in this part of the study are descriptive analysis of the data, which includes the analysis of the overall mean scores, standard deviations, median, minimum and maximum and for each individual variable; and the univariate means differences test and the non-parametric pooled GLS (random effect) regression test, which test for the existence of a relationship between earnings management and attributes of corporate governance and external audit factors.

5.7 Summary

Selecting the appropriate research methodology and data collection techniques is a very critical stage in conducting any research project because they ensure that the research goals will be achieved. This chapter has provided a detailed description of the steps taken to prepare for the

analysis phase of this study. These steps include illustrations of EM measurement, the measurement of the independent and control variables, the sampling process and data collection issues, the research design, and the selection of the appropriate analytical methods. The chapter also provides information about what issues were considered when implementing each step.

To summarise the methodology described in this chapter, this research uses corporate disclosure data collected from annual reports and DataStream to empirically test indicators of corporate governance, external audit factors and earnings management. Firms in the FTSE 350 index is the initial sample selected for this study and the 2003, 2004, 2005 and 2006 financial years comprise the period used to apply the study. Then, financial, mining and regulated industries are excluded from the sample due to the different nature of their accounting practices. This research will adopt the positivism approach and due to the independence of corporate governance factors over time, a cross-sectional approach is applied to test the hypotheses, and models are tested using pooled GLS regression.

The following Results and Discussion chapter presents the results of the tests selected to analyse the data gathered according to the steps described in this chapter. The summary of the variables and their measurement is presented in table 5.3 below.

Table (5.3) Summary of variables and their measurements

Symbol	Variable	Operationalisation
EM	Earnings management	Absolute value of the discretionary accruals estimated by the Kaothari *et al.* (2005) model.
BRDSIZE	Board size	The number of directors on the board.
BRDIND	Board independence	The proportion of independent non-executive directors to total board members.
BRDMEET	Board meetings	The number of board meetings held annually by the board of directors.
CHAIRIND	Chairman independence	A dummy variable that takes the value of one if the chairman is independent according to the NEDs independence criteria recommended by the Code, and zero otherwise.
CHAIRCOD	Chairman independence	A dummy variable that takes the value of one if the chairman is independent according to the chairman independence criteria recommended by the code, and zero otherwise.
WOMEN	Gender diversity	The percentage of female directors to total board members.
NOMIND	Nomination committee independence	The proportion of independent non-executive directors on the nomination committee to total committee members.
REMUIND	Remuneration committee independence	A dummy variable that takes the value of one if the remuneration committee is composed entirely of independent directors, and zero otherwise.
NEDMEET	Non-executive directors private meetings	A dummy variable that takes the value of one if NEDs meet with chairman without the presence of the executive directors, and zero otherwise.
NEDFEE	NEDs fees	Total fees paid to NEDs divided by the total number of NEDs.
AUDIND	Audit committee independence	The proportion of independent non-executive directors in the audit committee to total committee members.
AUDEXP	Audit committee competence	A dummy variable that takes the value of one if at least one independent financial expert sits in the audit committee, and zero otherwise.
AUDSIZE	Audit committee size	The total number of members on the audit committee.
AUDMEET	Audit committee meetings	The yearly number of audit committee meetings.
MANGOWN	Management ownership	The percentage of total shares held by executive directors divided by the total number of shares.
INSTOWN	Institutional ownership	The average percentage of shares outstanding owned by institutional investors
BLOCK	Blockholder ownership	A dummy variable taking the value of one if the firm has an external stockholder owning 10% or more of the outstanding shares, and zero otherwise.
NAF1	Non-audit fees	The natural logarithm of non-audit fees
NAF2	Non-audit fees	Ratio of non-audit fees to total fees
AF1	Audit fees	The natural logarithm of audit fees
AF2	Audit fees	Ratio of audit fees to total fees
SPEAUD1	Specialised auditor	The revenue of audit firm's clients within a specific industry divided by the total revenues of all audited companies within that industry.

SPEAUD2	Specialised auditor	The number of clients in a specific industry audited by the same auditor
LEV	Leverage	Total long-term debt divided by total assets.
GROWTH	Growth	Market-to-book assets ratio
SIZE	Size	The natural logarithm of total assets at year-end
CFO	CFO	Cash flows from operating activities divided by beginning of period total assets.
ROA	Performance	Net income divided by the total assets at the end of the year.
IFRS	IFRS	A dummy variable that take the value of one if a firm uses IFRS, and zero otherwise.

Chapter Six

Data Analysis and Discussion

6.1 Introduction

This chapter presents the results of the data analysis based on the research methods detailed in the previous chapter. Tests are performed with the objective of providing empirical evidence to answer the primary research question:

"Do corporate governance and external audit constrain earnings management practice in the UK?"

In this chapter, the 19 hypotheses outlined in the previous chapter are tested using both of the empirical research models adopted for this research. Section 6.2 illustrates the development of the variables for discretionary accruals. Section 6.3 presents and discusses the descriptive statistics and univariate analysis. Section 6.4 presents and discusses the correlation coefficients. Section 6.5 illustrates and discusses the results of testing the hypotheses. Section 6.6 presents and discusses further analysis and the robustness checks. Section 6.7 summarises the analysis and the findings.

6.2 Earnings Management (Discretionary Accruals)

As discussed in the chapter five, the present study uses discretionary accruals as a measure of earnings management. Discretionary accruals (DAC) are defined as the difference between total accruals and non-discretionary accruals, where discretionary accruals are estimated using the Kothari *et al* (2005) model as follows:

$$TA_{it} = \acute{\alpha} (1 / TA_{it-1}) + \beta 1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \beta_2 (PPE_{it} / TA_{it-1}) + \beta_3 ROA_{it-1} + \varepsilon_{it}$$

TA = Total accruals, A = Beginning of year total assets, ΔREV = Change in net revenue, ΔREC= Change in account receivables, PPE = Gross Property, plant, and equipment, ROA= Lagged return on assets.

Absolute discretionary accruals are used as the magnitude of the deviation of reported earnings rather than the direction of EM. Table 6-3 presents the descriptive statistics for the estimated coefficients of the earnings management model during the period 2003-2006.

To estimate the coefficients of the above accruals model, ordinary least squares (OLS) regression is used to estimate the equation by industry for each year. The resulting model from the above equation is then used to calculate discretionary accruals through the difference between total accruals and non-discretionary accruals for each firm. The calculation of total accruals covers 16 industries over four financial years.

Table 6.1

Descriptive Statistics for EM Model Coefficients

Parameter	Mean	Median	Minimum	Maximum
α	790.4	-1727.6	-24093.2	92521.5
β_1	0.059	-0.004	-0.441	0.210
β_2	-0.082	-0.075	-0.707	0.178
β_3	-0.423	-0.380	-0.726	0.180

In order to assess the ability of this study's earnings management model to discriminate between discretionary and non-discretionary accruals, table 6.1 provides a summary of the statistical properties of the model's coefficients. Consistent with expectations, the sign of the property, plant, and equipment (PPE) variable is negative because it represents an income-decreasing accrual (i.e., depreciation and amortisation expense).

The ˆβ1 coefficient (change in revenues) is, on average, positive. However, the sign of the change in revenues coefficient is not as direct as the PPE variable. This is because a change in revenues can result in income-increasing or income-decreasing changes in some working capital accounts. For

instance, increases in accounts receivable cause income-increasing changes and increases in accounts payable cause income-decreasing changes. From table 6.1, the mean of the revenue coefficient shows that income-increasing dominates the sign of the change in the revenues variable.

Moreover, the model is significant at the level of 1%. The Kothari *et al*. (2005) model has an explanatory power of 57 %. Therefore, it appears that the model is well specified and produces credible estimates for separating total accruals into their discretionary and non-discretionary components. (Bernard and Skinner, 1996 and Davidson *et al*., 2005).

6.3 Descriptive Statistics and Univariate Analyses

The descriptive statistics for all variables are presented in table 6.2 for the first model and in table 6.3 for the second model. Each table separates the variables based on the level of discretionary accruals into low and high discretionary accruals based on whether the firm's level of discretionary accruals is lower or higher than the yearly cross-sectional median.

Separating firms into two groups based on the indicator of earnings management enables an investigation of whether corporate governance attributes are more effective when managers have incentives to manage earnings and it is also expected to provide more information on the characteristics of the firm (i.e. size, performance and growth). The following section will discuss the descriptive statistics and the univariate tests. Although the data is considered to be non-parametric, both parametric (t-test) and non-parametric (Mann Whitney test) tests are applied as a mean of robustness.

6.3.1 Descriptive Statistics and Univariate Analyses for the First Model

The descriptive statistics of discretionary accruals (DAC) in the first model, as presented in table 6.2, show that the absolute value of DAC for the companies in this study sample has a small mean value of 0.05, whereas the minimum value is much closer to 0 (0.0001). These findings are consistent with Klein (2002b) who obtains a minimum value of absolute DAC among large US firms of 0.00002. However, the mean of absolute DAC among US companies in Xie et al. (2003) study is higher at 0.10. Othman and Zeghal (2006) report closer means of absolute DAC among

Canadian and French companies of 0.06 and 0.03, respectively. Additionally, the importance of discretionary accruals rests with the assumption that discretionary accruals represent managers' discretion over accruals. This assumption is partly validated by the significant difference between DAC means.

This study sample shows low and high percentages of independence in both boards of directors and nomination committees, at around 44% and 69%, respectively. However, 75% of the sample firms have fully independent remuneration committee rather than the 100% independence level recommended by the Code. These statistics show a relatively high compliance rate with the UK corporate governance recommendations on boards' and nomination committees' independence but not with the remuneration committee independence recommendation.

Table 6.2 also shows that firms with high discretionary accruals display lower means of board independence and nomination committee independence than firms with a low level of discretionary accruals. When the Code's chairman independence criteria are applied, around 84% of the chairmen can be considered to be independent. However, when the Code's NEDs' independence criteria are applied to chairmen, only 51% of them are deemed to be independent. As expected, CHAIRIND shows a significant difference between the high and low earnings management groups, at a 1% level in both tests.

This result, along with the previous results on the board independence and nomination committee independence, emphasises the importance of the independence characteristic in constraining earnings management, as prior studies have documented (Peasnell *et al*., 2000b; Peasnell *et al*., 2005; Chtourou *et al*., 2001; Klein, 2002b and Xie *et al*., 2003).

However, remuneration committee independence shows no significance in the difference between the two groups. This is relatively reasonable as the average compliance with the Code's recommendation regarding this committee is low compared to compliance with the Code's recommendations on board of directors and nomination committee independence, as discussed previously in this section.

Comparing the means for board size shows that larger boards are associated with a low level of discretionary accruals. This is consistent with the overwhelming majority of the previous studies.

The average board size in this study is about 9 members (mean = 9.22). Board size in the UK appears to be smaller than board size in US firms (e.g., mean size of about 11 in Bhagat & Black, 2002) but larger than for firms in Australia (e.g., mean size of about 7 in Kiel & Nicholson, 2003). The previous UK study by Peasnell, *et al*. (2005) reports a mean board size of around 8 members.

The difference between this study's board size mean and that reported by Peasnell, *et al*. (2005) may be due to one or both of following reasons. First, there may have been an increase in board size in the UK during the last 10 years, which represents the difference between the sample periods of the two studies. Secondly, this increase is most likely due to the larger average firm size in this study sample compared to Peasnell *et al*.'s (2005) sample. This study uses the FTSE 350 Index, which is dominated by large firms, whereas Peasnell, *et al*. (2005) study all UK listed companies, so that their study includes more small sized firms, which tend to have smaller boards.

The mean of the number of female directors sitting on FTSE 350 boards is less than one (.07), which may be considered as a slightly disappointing figure. Previous research suggests that the diversity of UK boards, measured as the proportion of FTSE 100 directorships held by women, has risen considerably in recent years. For example, the proportion of directors that are female more than doubled from 3.7% to 8.6% in FTSE 100 Index firms in the period from 1995 to 2003 (Conyon & Mallin, 1997, Singh & Vinnicombe, 2004). In a more recent study, Grosvold, *et al.* (2007) present figures that indicate that the proportion of FTSE 100 directorships held by female directors roughly doubled over the period from 1999 to 2005, rising from 4.9 to 10.5. This study shows that the proportion of female directors is about 6% in this sample of firms, and it increased from 5% in 2003 to 8% in 2006. Comparing this study with previous studies, the figures show that, on average, FTSE 100 Index firms have more female directors than the FTSE 350 Index firms in this sample.

The relatively low proportion of female directors found in this study supports the findings of Brammer, *et al*. (2007) that both ethnic and gender diversity are very limited, and that diversity is somewhat less pronounced in executive positions. Their study is based on identifying all directors

on the main boards of 543 UK PLCs from the FTSE All-Share Index in 2002. Obviously, there is much yet to be done to improve the gender balance of corporate boards in the UK.

Even though this study finds that women have more presence (a mean of .07) on the boards of companies in the lower level of earnings management group compared to their presence (a mean of .06) on boards in the high level of earnings management group, this study finds no support for the hypothesis that the presence of female directors on companies' boards reduces earnings management practices.

In terms of NED commitment, only 58% of our sample firms hold at least one NEDs' private meeting each year, whereas boards meet, on average, more than 8 times a year. The average NED fee (without log) is £39,000, and it increased dramatically from average of £34,000 in 2003 to £43,000 in 2006. This supports the notion that there is a strong demand for qualified (assumed to be highly paid) independent directors to conform with recent recommendations on corporate governance. Additionally, firms with high levels of earnings management are found to have fewer NEDs' private meetings and to pay lower NED fees, as expected in the NEDs' commitment hypotheses. These differences are found to be significant in both tests.

In terms of ownership structures, the typical sample firm has a mean managerial ownership of 3% and a mean institutional ownership of 24%, with 54% of the study sample having at least one external block holder whose stake exceeds 10%. These levels are comparable to those reported in previous studies of the UK. For example, Peasnell *et al* (2005) report means of managerial ownership of 2% and institutional ownership of 21%, with 53% of firms having a large blockholder. These results are also similar to Short and Keasey's (1999) descriptive statistics.

Contrary to this study's hypothesis, institutional ownership, management ownership and blockholders are slightly higher in the high earnings management group, but no significant difference is found. Nevertheless, some previous studies have also documented this contradiction. Bergstresser and Philippon (2006) provide evidence that the use of discretionary accruals is more pronounced in firms with a high managerial ownership, more specifically where the CEO's potential total compensation is closely tied to the value of stock and option holdings. Ronen *et al.*'s (2006)

empirical study supports this relationship. This result is also consistent with the empirical findings of Yu (2008), who uses the percentage of the largest blockholder and investigates its association with discretionary accrual and finds that the level of earnings management in a firm with large shareholders is higher than that of a firm without large shareholders by 17% of the sample mean and by 30% of the median.

In the low earnings management group, half of the firms report according to IFRS, whereas in the high earnings management group only around a third of the firms use IFRS. Less risky firms seem to have more earnings management. The results relating to leverage are consistent with Becker *et al*. (1998) who find that leverage is negatively associated with the absolute value of discretionary accruals. Both IFRS use and leverage show a significant difference according to the earnings management level in both tests.

Interestingly, the CFO mean is similar to that of Peasnell *et al*. (2005) who conducted their study on UK firms between 1993 and 1996. The typical sample firm has a mean of - 0.11 for CFO. The average ROA is –0.11, which is slightly lower than reported ROA values for Australian firms studied by Kiel & Nicholson (2003) and Goodwin *et al*. (2008) and lower than the average ROA in the US firms studied by Huang *et al*. (2007).

6.3.2 Descriptive Statistics and Univariate Analyses for the Second Model

The descriptive statistics of DAC for the second model show that the absolute value of DAC in FTSE 350 companies has a small mean value of 0.07, whereas the minimum value is much closer to 0 (0.0001). These findings are consistent with previously mentioned studies in the previous section.

In the second model, as table 6.3 shows, audit fees are 55% of the total fees and non-audit fees are 45%. Three out of four audit fees variables show a significant difference between the two earnings management groups. NAF1 is the only variable that shows inconsistency with the other proxies of auditor independence.

Table 6.3 also shows that only 22% of the sample firms employ a specialised auditor measured by market share and 31% employ a specialised auditor measured by the number of audited clients.

However, both SPEAUD1 and SPEAUD2 means do not differ significantly according to the earnings management level.

The average number of audit committee meetings in this sample is 3.45, which is smaller than the US figure of 4.53 reported by Xie *et al* (2003). This is may be due to the different corporate governance requirements in each country. In the US, the BRC (1999) recommends that audit committees meet at least once quarterly, whereas the UK Combined Code (2003) recommends at least three meetings a year. However, average audit committee size of 3.58 and number of meetings 3.45 in the UK, as shown by this study, are higher than in Australia on the basis of figures reported by Davidson *et al*. (2005). They examine 434 firms listed on the ASX for the financial year ending in 2000 and report an average audit committee size of 2.56 and an average of 2.50 meetings. Firms with low discretionary accruals tend to have a larger mean of audit committee size than firms with a high level of discretionary accruals. These results are significant in both tests and consistent with previous findings by Yang and Krishnan (2005), who find that audit committee size is negatively related to earnings management.

However, contrary to this study's hypothesis, the number of audit committee meetings is larger in the high earnings management level group than in the other group. The audit committee meeting result suggests that audit committee directors now have a busy schedule of bureaucratic meetings, which makes them less responsive to corporate challenges and, indeed, less attentive to monitoring needs. This result supports the argument of Lipton and Lorsch (1992) who points out that those meetings are not necessarily functional because, given their limited time; they restrict the meaningful exchange of ideas among directors or with managers.

As expected, the means of audit committee independence show that an independent audit committee is associated with a low level of discretionary accruals. This is consistent with prior studies, such as those of Beasley (1996) and Bradbury (2006) that empirically find that audit committee independence is strongly associated with lower levels of earnings management.

Table 6.2 Pooled Descriptive Statistics and Univariate Test for First Model															
Full Sample								Low EM		High EM		T-test		Mann Whitney test	
Variables	Mean	Min	Max	Median	Sd	Skewness	Kurtosis	Mean	sd	Mean	sd	t-value	Prob.	z-value	Prob.
DAC	0.057	0.000	0.988	0.043	0.069	6.275	74.241	0.019	0.012	0.096	0.080	18.590	***	18.914	***
BRDIND	0.443	0.000	0.778	0.444	0.133	-0.131	3.277	0.456	0.135	0.430	0.131	-2.079	**	-2.068	**
BRDMEET	8.500	4.000	19.000	8.000	2.546	0.845	4.339	8.450	2.368	8.550	2.715	0.431		0.182	
BRDSZE	9.224	4.000	20.000	9.000	2.426	0.979	4.651	9.105	2.509	9.342	2.339	1.066		1.404	
WOMEN	0.068	0.000	0.500	0.000	0.092	1.405	4.875	0.072	0.096	0.063	0.089	-1.093		-0.960	
NOMIND	0.691	0.000	1.000	0.667	0.228	-0.551	3.344	0.718	0.200	0.664	0.250	-1.738	*	-2.080	**
REMUIND	0.749	0.000	1.000	1.000	0.434	-1.148	2.319	0.744	0.438	0.754	0.431	0.263		0.911	
CHAIRND	0.515	0.000	1.000	1.000	0.500	-0.059	1.003	0.570	0.501	0.459	0.500	-2.858	***	-2.837	***
CHAIRCOD	0.845	0.000	1.000	1.000	0.362	-1.909	4.643	0.861	0.346	0.829	0.377	1.225		0.971	
NEDFEE	1.004	0.286	2.958	0.968	0.262	1.398	9.684	1.187	0.265	0.989	0.260	-1.625	*	-1.545	*
NEDMEET	0.588	0.000	1.000	1.000	0.493	-0.357	1.127	0.639	0.481	0.538	0.500	-2.254	**	-2.244	**
MANGOWN	0.033	0.000	0.630	0.000	0.088	3.652	17.877	0.028	0.084	0.037	0.093	-1.109		-1.460	
INSTOWN	24.78	0.000	95.22	23.12	15.32	1.045	4.742	23.62	14.05	25.93	16.42	1.547		1.334	
BLOCK	0.541	0.000	1.000	1.000	0.499	-0.165	1.027	0.517	0.501	0.565	0.497	1.062		1.062	
IFRS	0.441	0.000	1.000	0.000	0.497	0.236	1.056	0.487	0.501	0.396	0.490	-2.020	**	-2.014	**
SIZE	6.042	4.561	7.422	6.025	0.573	0.183	2.803	6.018	0.520	6.067	0.622	0.925		0.927	
LEVG	24.89	0.000	117.7	23.39	18.00	0.971	4.756	27.20	19.04	22.60	16.63	-2.815	***	-2.544	***
GROWTH	0.116	-0.948	5.876	0.069	0.416	8.191	98.683	0.076	0.199	0.156	0.552	2.111	**	0.849	
CFO	-0.111	-0.447	0.128	-0.098	0.075	-0.682	4.723	-0.101	0.058	-0.121	0.087	-3.013	***	-2.944	***
ROA	-0.113	-0.400	0.325	-0.102	0.086	-0.484	5.472	-0.107	0.070	-0.119	0.100	-1.593	*	-1.305	

As shown in table 6.3, about 77% of audit committees in this study meet the UK (2003) Corporate Governance Code's requirement of having at least one financial expert as a member of the audit committee. Comparing the means of AUDEXP, shows that those audit committees with a financial expert tend to have significantly lower levels of discretionary accruals in both tests.

In terms of the control variables, IFRS, CFO and MANAGOWN are still significant in both models. GROWTH is the only variable that produces inconclusive results in both tests in both models; the t-test shows a significant positive difference but the significance disappears in the non-parametric test. This may be due to GROWTH being highly skewed, which makes the t-test result unreliable and incomparable with the Mann Whitney test results.

This biasing may result from the time period utilised by this study. Certain industries, but not all, may have experienced a particularly high period of growth during this time frame. This may have caused a skew in the data and resulted in inconsistent results. However, due to the contradictory nature of this variable result, it is deemed appropriate to conduct a separate test in the sensitivity analysis section that excludes this variable from the main regressions in both models.

The results of the descriptive statistics emphasise the need to consider the level of discretionary accruals when testing the impact of corporate governance attributes and external audit factors on earnings management. These results are investigated further in the multivariate analysis section.

Table 6.3 Pooled Descriptive Statistics and Univariate Test for the Second Model															
Full Sample								Low EM		High EM		T-test		Mann Whitney test	
Variables	**Mean**	**Min**	**Max**	**Median**	**sd**	**Skewness**	**Kurtosis**	**Mean**	**sd**	**Mean**	**sd**	**t-value**	**Prob.**	**z-value**	**Prob.**
DAC	0.068	0.000	0.990	0.049	0.083	5.159	44.786	0.024	0.014	0.113	0.098	18.910	***	13.852	***
NAF1	-0.258	-2.000	2.699	-0.301	0.611	0.321	3.860	-0.223	0.599	-0.291	0.622	1.035		1.189	
AF1	-0.203	-2.155	1.253	-0.222	0.488	-0.077	3.137	-0.154	0.480	-0.253	0.492	-2.033	**	-2.209	**
NAF2	0.449	0.000	0.978	0.415	0.226	0.268	2.434	0.436	0.219	0.505	0.249	2.180	***	2.652	***
AF2	0.551	0.022	1.000	0.586	0.226	-0.271	2.438	0.565	0.219	0.495	0.249	-2.006	***	-2.662	***
SPEAUD1	0.226	0.000	1.000	0.000	0.354	2.000	5.000	0.159	0.366	0.134	0.341	-0.775		-0.775	
SPEAUD2	0.318	0.000	1.000	0.000	0.466	0.782	1.611	0.305	0.462	0.331	0.471	0.589		0.588	
AUDSIZE	3.584	2.000	8.000	3.000	0.859	1.070	5.708	3.728	0.911	3.439	0.780	-3.808	***	-3.722	***
AUDMEET	3.456	1.000	8.000	3.000	1.200	0.366	3.876	3.339	1.159	3.573	1.231	1.765	*	2.143	**
AUDIIND	0.836	0.000	1.000	1.000	0.233	-1.303	3.981	0.858	0.228	0.813	0.236	-2.549	***	-2.123	**
AUDEXP	0.776	0.000	1.000	1.000	0.417	-1.325	2.756	0.807	0.395	0.649	0.480	-3.298	***	-3.330	***
MANGOWN	0.032	0.000	0.630	0.000	0.088	3.652	17.877	0.025	0.078	0.041	0.097	2.497	**	1.938	**
IFRS	0.431	0.000	1.000	0.000	0.497	0.236	1.056	0.519	0.501	0.364	0.482	-3.405	***	-3.443	***
SIZE	5.973	4.561	7.179	5.967	0.422	0.019	2.693	5.686	0.275	6.260	0.340	2.858	***	3.132	***
LEVG	22.82	0.000	117.7	23.39	18.00	0.971	4.756	23.41	16.66	26.37	19.170	1.371		1.702	
GROWTH	0.101	-0.948	5.876	0.069	0.416	8.191	98.683	0.126	0.276	0.106	0.520	-2.874	***	-0.547	
CFO	-0.117	-0.447	0.128	-0.098	0.075	-0.682	4.723	-0.098	0.062	-0.124	0.084	-4.479	***	-3.863	***
ROA	-0.111	-0.400	0.325	-0.102	0.086	-0.484	5.472	-0.112	0.077	-0.113	0.095	0.524		0.150	

6.3.3 Industry-wise Descriptive Statistics

Table 6.3.1 presents the descriptive statistics for all variables based in the industry type. Separating firms into groups based on the industry type highlights the difference in practice of corporate governance and earnings management, in diverse characteristics and regulations that may not apply to other industries.

Following prior studies by Frankel et al. (2002) and Srinidhi and Gul, (2007), this study conducts industry-wise descriptive statistics for both models' variables for each of the six largest industries in this research sample, which represents more than 60% of the firms in the sample, namely, Restaurants, Pubs & Breweries, Construction & Building Materials, Media & Photography, Leisure, Entertainment & Hotels, General Retailers and Support Services.

The descriptive statistics of discretionary accruals (DAC) variable, as presented in table 6.3.1, shows that the absolute value of DAC for the companies in this study sample, varies based on industry type. Leisure, Entertainment & Hotels industry shows a slightly lower DAC mean than the pooled sample mean, while the Media & Photography and the Construction & Building Materials industry show slightly higher DAC means. However, both industries are very close to the pooled sample mean of around 0, 05.

The Media & Photography and the Construction & Building Materials industry's high DAC means may differ because they are highly complex industries that may have more motives and scope than others to manage earnings. The Media & Photography industry involves in more digital and web based transactions while the Construction & Building Materials industry includes firms with complex contracting and revenue recognition issues, which may make it difficult for independent directors and external auditors to detect earnings management. This result supports the findings of Beasley et al. (2000) that the nature of fraud differs by industry and that certain industries have more particular types of fraud than other industries.

In terms of board composition variables, BRDIND and BRDMEET are about 40% and 8 respectively for all industries. However, Restaurants, Pubs & Breweries industry shows the largest board size mean of around 11 members. Female directors that present in the General Retailers industry boards are considerably high while their presence in the Support Services and Construction & Building Materials are considerably low.

The study sample shows low and high percentages of independence in both nomination and remuneration committees within the Media & Photography industry and Leisure, Entertainment & Hotels industry respectively, which is line with their mean of earnings management means. These statistics also show a relatively high compliance rate with the UK corporate governance recommendations on boards' and nomination committees' independence.

In terms of NED commitment, only 58% of the sample firms hold at least one NEDs' private meeting each year, whereas boards meet, on average, more than 8 times per year. The average NED fee (without log) is £39,000. Independent directors who work in the Restaurants, Pubs & Breweries industry receive the highest fees (around £43,000) while the Support Services industry pay much less fees than the average (around £31,000).

In terms of ownership structures, the Support Services industry has a low mean of managerial ownership of 1% but has high means of both institutional ownership and block holder whose stakes exceed 10%. These levels are comparable to those statistics reported in the previous section, in that the same industry pay less for independent directors and restrict managers ownership which may be due to the influence of external ownership held by institutional investors.

Regarding external auditor factors, Construction & Building Materials industry require less non-audit fees comparing to other industries which may be due to the fact that this industry is more likely not to employ a specialised auditor. In contrast, Restaurants, Pubs & Breweries industry pay high non-audit fees and are more likely to employ a specialised auditor. These differences support the argument of (Craswell et al. 1995) that the demand for and supply of non-audit services, as well as the effect of the specialised auditor, can differ by industry.

In terms of audit committee characteristics, the average number of audit committee meetings and the average audit committee size do not appreciably vary between industries. However, the Construction & Building Materials industry and Leisure, Entertainment & Hotels industry show a high compliance with the corporate governance combined code (2003) recommendations regarding the audit committees independence and financial expertise, while Restaurants, Pubs & Breweries show much lower compliance with these recommendations.

In terms of the control variables, the Media & Photography industry shows the lowest compliance with IFRS. Construction & Building Materials industry has less risky firms that report the lowest leverage mean and the fastest growing industry while Leisure, Entertainment & Hotels industry are highly leveraged and low in growth. Interestingly, the CFO and ROA means do not largely vary between industries, however, Support Services and General Retailer industries slightly outperform other industries.

In conclusion, the previous descriptive statistics show some variations in certain corporate governance variables based on the type of industry in which the company operates. In average, Leisure, Entertainment & Hotels industry shows a high compliance with the corporate governance combined code (2003) recommendations and less earnings management while Media & Photography shows much lower compliance with these recommendations and higher earnings management.

Table 6.3 Industry-wise Descriptive Statistics

Industry name	Restaurants, Pubs & Breweries			Media & Photography			Leisure, Entertainment & Hotels			General Retailers			Support Services			Construction & Building Materials		
Variables	**Mean**	**Median**	**St**	**Mean**	**Median**	**St**	**Mean**	**Median**	**St**	**Mean**	**Median**	**St**	**Mean**	**Median**	**St**	**Mean**	**Median**	**St**
DAC	0.044	0.031	0.060	0.075	0.074	0.044	0.036	0.026	0.041	0.067	0.061	0.058	0.062	0.060	0.060	0.078	0.069	0.045
BRDIND	0.434	0.500	0.176	0.368	0.364	0.098	0.474	0.500	0.109	0.464	0.500	0.107	0.375	0.333	0.099	0.400	0.400	0.087
BRDMEET	7.347	7.000	1.508	8.524	9.000	2.713	8.931	8.000	2.751	8.553	9.000	2.446	7.160	7.000	2.444	8.860	8.000	2.426
BRDSZE	11.143	10.000	3.317	9.048	9.000	1.658	8.793	9.000	2.077	8.263	8.000	1.688	8.200	8.000	1.354	9.465	9.000	1.638
WOMEN	0.100	0.091	0.093	0.091	0.100	0.070	0.074	0.000	0.104	0.131	0.106	0.137	0.018	0.000	0.070	0.034	0.000	0.056
NOMIND	0.687	0.750	0.299	0.544	0.600	0.282	0.863	1.000	0.222	0.812	0.775	0.192	0.653	0.750	0.316	0.717	0.750	0.154
REMUIND	0.592	1.000	0.497	0.381	0.000	0.498	0.931	1.000	0.258	0.789	1.000	0.413	0.600	1.000	0.500	0.884	1.000	0.324
CHAIRIND	0.469	0.000	0.504	0.484	0.000	0.468	0.655	1.000	0.484	0.526	1.000	0.506	0.560	1.000	0.507	0.488	0.000	0.506
NEDMEET	0.388	0.000	0.492	0.762	1.000	0.436	0.643	1.000	0.488	0.658	1.000	0.481	0.400	0.000	0.500	0.442	0.000	0.502
NEDFEE	42985	44000	10555	40476	42000	9765	39319	37500	6153	38572	37500	7825	31457	30000	6880	37372	36000	8712
AUDSIZE	3.429	3.000	0.736	3.381	3.000	0.669	3.586	4.000	0.628	3.737	4.000	0.828	3.320	3.000	0.557	3.302	3.000	0.708
AUDIIND	0.727	1.000	0.360	0.790	0.750	0.234	0.917	1.000	0.165	0.872	1.000	0.177	0.893	1.000	0.169	0.942	1.000	0.124
AUDEXP	0.571	1.000	0.500	0.810	1.000	0.402	0.966	1.000	0.186	0.789	1.000	0.413	0.720	1.000	0.458	0.953	1.000	0.213
AUDMEET	3.980	4.000	1.521	3.571	3.000	1.287	4.310	4.000	0.891	3.605	4.000	1.054	3.720	4.000	1.021	3.744	4.000	0.727
NAF	0.511	0.500	0.204	0.490	0.500	0.244	0.468	0.444	0.274	0.475	0.482	0.250	0.500	0.425	0.235	0.417	0.408	0.242
AF	0.489	0.500	0.204	0.510	0.500	0.244	0.532	0.556	0.274	0.525	0.518	0.250	0.500	0.575	0.235	0.583	0.592	0.242
SPEAUD	0.467	1.000	0.283	0.351	1.000	0.303	0.179	0.000	0.294	0.300	0.500	0.307	0.240	0.000	0.207	0.079	0.000	0.254
MANGOWN	0.031	0.000	0.070	0.059	0.000	0.138	0.040	0.000	0.079	0.061	0.000	0.144	0.019	0.000	0.036	0.028	0.000	0.049
INSTOWN	29.16	29.00	16.83	23.48	22.00	17.56	26.21	25.50	13.84	23.69	22.50	16.74	34.80	34.50	15.28	31.51	35.00	19.97
BLOCK	0.755	1.000	0.434	0.333	0.000	0.483	0.621	1.000	0.494	0.684	1.000	0.471	0.739	1.000	0.449	0.419	0.000	0.499
IFRS	0.510	1.000	0.505	0.333	0.000	0.483	0.414	0.000	0.501	0.395	0.000	0.495	0.520	1.000	0.510	0.442	0.000	0.502
SIZE	6.236	6.338	0.548	6.190	6.531	0.782	6.305	6.277	0.305	5.972	5.858	0.533	5.582	5.660	0.391	6.115	6.022	0.334
LEVG	0.301	0.303	0.139	0.395	0.388	0.145	0.427	0.413	0.208	0.227	0.172	0.217	0.287	0.301	0.188	0.144	0.126	0.106
GROWTH	0.102	0.065	0.164	0.082	0.054	0.141	0.028	0.046	0.441	0.026	0.051	0.182	0.141	0.076	0.195	0.115	0.102	0.130
CFO	0.107	0.083	0.079	0.105	0.072	0.093	0.098	0.110	0.060	0.137	0.106	0.091	0.180	0.174	0.100	0.083	0.086	0.066
ROA	0.100	0.082	0.076	0.109	0.075	0.089	0.101	0.078	0.075	0.144	0.107	0.101	0.154	0.127	0.110	0.122	0.128	0.054

6.4 Correlation Coefficients

This section presents both the Pearson correlations and the Spearman rank correlation among the variables of corporate governance, the external audit and firm characteristics. The correlation coefficients are checked for the presence of high collinearity among regressors. Table 6.4 presents both the Pearson correlations and the Spearman rank correlation for the first model, and table 6.5 presents both the Pearson correlations and the Spearman rank correlation for the second model.

6.4.1 First Model Correlation Coefficients

From the correlation coefficients for the first model, shown in table 6.4, no high correlation is found among the variables. As a result, collinearity does not appear to create a threat to the interpretation of regression coefficients of the independent variables in this model. However, from the Pearson correlation, the highest coefficient is 0.59 between cash from operations (CFO) and return on assets (ROA) This correlation is expected and is found in previous studies, such as that of Abdul Rahman and Ali *et al*. (2006) who report even higher collinearity (67%) but considered this collinearity to be harmless.

Another significant and relatively high correlation (50%) is between firm size (SIZE) and board size (BRDSIZE). This is found in many similar prior studies, suggesting that large firms have large boards. All these variables are included in the same model since the correlations are not strong (lower than 0.800). Gujarati (2003) and Hair, Anderson, Tatham and Black (1995) recommend 0.80 as the threshold at which multicollinearity concerns may threaten the regression analysis. Further, the Variance Inflation Factor (VIF) tests were carried out.

The significant and relatively high correlation between board independence, on one side, and NED fees and NEDs' private meetings, on the other side, shows that, as the ratio of independent members on the board increases, the more committed are the NEDs. There are other significant and relatively high correlations that show that firms with an independent board have high ROA and large size.

Consistent with the previous studies, it is found that management ownership is high when firms have less independence and less active boards with a non-independent chairman (Lasfer, 2006).

Management ownership is also significantly and negatively correlated with measures of NEDs' commitment.

6.4.2 Second Model Correlation Coefficients

Looking at the correlation coefficients in table 6.5, it is clear that there is no high correlation among the independent variables in the second model. As a result, collinearity does not appear to create a threat to the interpretation of regression coefficients of the independent variables in this model. Two correlation statistics in the second model are especially noteworthy. Coefficients of 0.56 and 0.53 respectively, between firm size, on one side, and non-audit fees and audit fees, on the other side, suggest that large firms pay more audit and non-audit fees than do smaller firms. Hence, any analysis that does not include size faces a potentially large omitted-variable bias.

Firm size is also positively and significantly correlated with audit committee size and independence. Audit committee size is also positively and significantly correlated with audit fees and non-audit fees with coefficients of 18% and 30%, respectively. Audit committee independence is also correlated with NAF and AF, but with smaller coefficients. All in all, large firms require both effective internal and external audit processes through a large audit committee and a large audit firm that charges larger audit and non-audit fees.

Table 6.4 Pearson (Top) and Spearman (Bottom) correlations coefficients for First Model

	BRDIND	BRDMET	BRDSZE	WOMEN	REMIND	NOMIND	CHAIRND	CHARCOD	NEDFEE	NEDMEE	MANGWN	INSTOW	BLOCK	IFRS	ROA	SIZE	LEVG	GRWTH	CFO
BRDIND		0.036	0.050	0.125*	0.073	0.225*	0.181*	-0.009	0.293*	0.239*	-0.198*	-0.084	-0.034	0.109*	0.120*	0.399*	0.105*	-0.113*	0.078
BRDMEET	0.056		-0.196*	-0.139*	0.033	0.100*	0.098*	0.169*	-0.019	0.065	-0.127*	-0.063	0.015	0.033	0.147*	-0.012	0.027	0.024	0.136*
BRDSZE	0.030	-0.196*		0.035	-0.006	-0.067	-0.109*	-0.059	0.134*	0.035	0.000	-0.103*	-0.086	0.002	0.028	0.489*	0.013	-0.023	0.063
WOMEN	0.133*	-0.150*	0.006		0.035	0.016	0.104*	-0.098*	0.127*	0.026	-0.047	-0.054	0.072	0.106*	-0.003	0.202*	-0.023	-0.073	-0.047
REMIND	0.065	0.019	-0.010	0.050		0.022	-0.007	0.015	0.048	0.054	-0.056	-0.030	0.077	0.080	-0.005	0.068	0.003	-0.121*	0.008
NOMIND	0.278*	0.114*	-0.015	-0.010	-0.001		0.147*	0.056	0.021	0.167*	-0.041	0.024	0.053	-0.012	-0.031	0.010	0.008	-0.072	-0.081
CHAIRND	0.200*	0.102*	-0.114*	0.069	-0.012	0.181*		0.405*	0.165*	0.146*	-0.117*	-0.027	0.098*	0.100*	-0.031	0.065	0.001	-0.013	0.009
CHAIRCOD	0.007	0.141*	-0.037	-0.111*	0.019	0.099*	0.394*		0.050	0.160*	-0.202*	0.009	0.039	0.052	-0.030	-0.008	0.067	-0.067	0.010
NEDFEE	0.221*	-0.010	0.120*	0.119*	0.039	0.000	0.175*	0.051		0.070	-0.172*	-0.053	0.000	0.334*	-0.019	0.438*	0.147*	-0.001	0.018
NEDMEET	0.233*	0.076	0.032	-0.004	0.054	0.162*	0.147*	0.146*	0.067		-0.093*	-0.032	-0.029	0.078	0.084	0.056	-0.024	0.052	0.055
MANGOWN	-0.175*	-0.156*	-0.047	-0.026	-0.019	-0.022	-0.102*	-0.192*	-0.165*	-0.118*		0.017	0.024	-0.160*	-0.076	-0.234*	-0.154*	0.079	-0.153*
INSTOWN	-0.074	-0.051	-0.086	-0.020	-0.047	0.063	-0.044	0.022	-0.027	-0.012	-0.014		0.319*	-0.054	0.076	-0.153*	-0.064	-0.024	0.024
BLOCK	-0.049	0.017	-0.067	0.058	0.077	0.020	0.092*	0.035	-0.037	-0.047	0.063	0.287*		0.025	-0.002	-0.103*	-0.039	-0.138*	-0.076
IFRS	0.119*	0.027	0.014	0.112*	0.068	-0.018	0.092*	0.043	0.311*	0.068	-0.045	-0.019	0.012		-0.113*	0.090	0.017	0.140*	0.035
ROA	0.029	0.124*	0.002	-0.066	-0.019	-0.016	-0.034	-0.057	-0.041	0.079	-0.054	-0.002	-0.014	-0.119*		0.240*	0.175*	0.119*	0.598*
SIZE	0.382*	0.015	0.500*	0.164*	0.068	0.068	0.069	-0.015	0.381*	0.065	-0.259*	-0.166*	-0.105*	0.084	0.216*		0.304*	-0.107*	0.275*
LEVG	0.090*	0.016	-0.016	-0.060	0.021	0.046	0.037	0.081	0.082	-0.009	-0.150*	-0.039	-0.020	0.006	0.082	0.235*		-0.1657*	0.137*
GROWTH	0.026	0.002	0.016	-0.045	-0.024	-0.060	-0.024	-0.087	-0.008	-0.009	-0.002	-0.032	-0.100*	0.007	0.082	0.015	-0.057		-0.078
CFO	0.063	0.154*	0.001	-0.105*	-0.004	-0.034	0.016	0.017	0.005	0.089	-0.163*	-0.047	-0.101*	0.014	0.632*	0.246*	0.087	-0.043	

* denote significance at the 0.05 level

Table 6.5 Pearson (Top) and Spearman (Bottom) correlations coefficients for Second Model

	NAF1	AF1	SPEAUD1	AUDSIZE	AUDMEET	AUDIIND	AUDEXP	MANGOWN	IFRS	SIZE	LEVG	GROWTH	CFO	ROA
NAF1		0.520*	0.054	0.214*	-0.036	0.113*	-0.041	-0.127*	0.113*	0.525*	0.158*	0.006	0.068	0.120*
AF1	0.581*		0.035	0.279*	-0.042	0.137*	-0.003	-0.258*	0.069	0.471*	0.133*	-0.075	0.187*	0.180*
SPEAUD1	0.025	0.033		-0.047	0.065	-0.010	-0.005	-0.014	-0.023	0.016	0.164*	-0.050	0.014	0.047
AUDSIZE	0.187*	0.301*	-0.068		-0.043	0.022	0.067	-0.073	0.024	0.284*	0.009	0.158*	0.092*	0.065
AUDMEET	-0.006	-0.045	0.063	-0.019		0.010	-0.047	0.038	-0.123*	-0.008	-0.045	-0.021	-0.025	0.023
AUDIIND	0.151*	0.200*	-0.010	0.036	-0.012		0.101*	-0.020	0.070	0.183*	-0.042	-0.018	0.067	0.089
AUDEXP	-0.027	0.020	-0.008	0.082	-0.047	0.081		-0.033	0.033	0.012	-0.021	0.068	-0.005	0.003
MANGOWN	-0.225*	-0.285*	-0.007	-0.095*	0.111*	-0.084	0.011		-0.045	-0.254*	-0.150*	-0.002	-0.163*	-0.054
IFRS	0.106*	0.069	-0.024	0.022	-0.15*	0.082	0.053	-0.144*		0.084	0.006	0.007	0.014	-0.114*
SIZE	0.564*	0.536*	0.038	0.250*	-0.006	0.189*	0.023	-0.251*	0.087		0.235*	0.015	0.246*	0.214*
LEVG	0.1875*	0.216*	0.153*	0.012	-0.036	-0.006	-0.026	-0.141*	0.009	0.276*		-0.057	0.087	0.082
GROWTH	-0.176*	-0.179*	-0.084	-0.087	-0.020	-0.075	0.039	0.097*	0.126*	-0.131*	-0.158*		-0.043	0.082
CFO	0.125*	0.163*	0.005	0.114*	-0.033	0.040	-0.006	-0.173*	0.027	0.287*	0.131*	-0.108*		0.632*
ROA	0.202*	0.278*	0.069	0.127*	0.050	0.144*	0.001	-0.094*	-0.125*	0.272*	0.177*	0.132*	0.610*	

* denote significance at the 0.05 level

NAF and AF have a relatively high correlation (0.58), which may suggest that firms that pay more audit fees also receive large amounts of non-audit services. However, given these relatively high correlations, this study calculates variance inflation factors (VIF) for both models and finds that VIF values are within acceptable limits. Table 6.6 shows the VIF and tolerance coefficients of each independent variable. Gujarati (2003, p.339) suggests that a VIF value of less than 10 is acceptable; the maximum VIF value in both models for CFO is 1.87.

The mean of VIF for both models is 1.36 and 1.26 respectively. Thus, multicollinearity does not appear to be a problem in either of the two models.

Table 6.6

VIF Test Results						
First Model				**Second Model**		
Variable	VIF	1/VIF		Variable	VIF	1/VIF
CFO	1.870	0.535		CFO	1.810	0.554
ROA	1.790	0.557		ROA	1.810	0.554
BRDSZE	1.670	0.598		AF1	1.610	0.621
BRDIND	1.450	0.690		NAF1	1.460	0.684
NEDFEE	1.370	0.729		LEVG	1.190	0.844
CHAIRND	1.350	0.741		AUDSIZE	1.170	0.853
CHAIRCOD	1.320	0.759		SPEAUD1	1.160	0.861
MANGOWN	1.190	0.842		MANGOWN	1.120	0.891
BRDMEET	1.170	0.851		SIZE	1.120	0.893
WOMEN	1.170	0.857		IFRS	1.080	0.925
IFRS	1.170	0.858		AUDIIND	1.070	0.937
BLOCK	1.160	0.863		GROWTH	1.060	0.945
INSTOWN	1.150	0.873		AUDMEET	1.050	0.950
NOMIND	1.150	0.873		AUDEXP	1.050	0.956
SIZE	1.120	0.880				
NEDMEET	1.130	0.882				
LEVG	1.120	0.890				
GROWTH	1.040	0.961				
REMIND	1.030	0.974				
Mean VIF	***1.360***			***Mean VIF***	***1.26***	

6.5 Tests of Hypotheses (Multivariate Analyses)

Generally, the results of this analysis are consistent with the univariate analysis. In this section the relevant regression test will be chosen and the justifications for the selected method will be discussed. Then, the results will be illustrated and compared with prior findings with particular attention to the previous UK findings, if available. The results and discussion of the first model will come first, and then the results and discussion of the second model will follow. The results for the control variables for both models will be discussed together as they show qualitatively similar results for both models.

Regression analysis, which is one of the most commonly used techniques of multivariate analysis, is applied in this study. This study examines the effect of multi variables on earnings management as a dependent variable; thus a multiple regression is considered to be suitable in this study. The ordinary least squares (OLS) regression is considered to be a powerful technique when the model contains both dummy and continuous variables (Hutcheson and Sofroniou, 1999), as is the case in this study. However, the use of OLS regression is subject to the conditions, illustrated in the previous chapter.

In the descriptive analysis, it can be seen that both skewness and kurtosis for some variables show high values. Data is considered to be normal if the standard skewness is within ±1.96 and standard kurtosis is ± 2 (Abdul Rahman and Ali, 2006). The dependent variable and most of the independent variables are not normally distributed, as shown in tables 6.1 and 6.2. Different transformation methods are applied and some of the variables are still not normally distributed.

The lack of normality of the dependant variable (DAC) is expected as this study deliberately does not eliminate the outliers of this variable, as firms with extreme values of earnings management potentially provide the observations that represent large negative accruals (e.g., big bath) or large positive accruals, which may actually represent management discretion. By excluding extreme discretionary accrual observations, the study may eliminate those cases of the earnings management that are the focus of this research.

Therefore, normality, which is one of the important assumptions of the parametric test, is not satisfied. Nevertheless, this is expected in this type of study (Abdul Rahman and Ali, 2006). Kao and Chen (2004) suggest that OLS is not suitable for the regression when the dependent variable is the absolute value of earnings management that is limited to only positive values.

Generally, parametric tests are more powerful when all assumptions are met. However, if any of the OLS assumptions are violated by the data; non-parametric tests become more appropriate (Balian, 1982). According to Zhang and Liu (2009), non-parametric statistical techniques can be considered as an alternative to parametric techniques to avoid the need for satisfying the assumptions required by parametric techniques. Non-parametric tests are considered to be a distribution-free method as they make no assumption with regard to the distribution of the sample scores. Additionally, non-parametric tests do not require the measurement of data on an interval scale and do not require data to meet the rigorous assumptions of normality and homogeneity of variance required by the parametric methods.

Given the above discussion, non-parametric tests are applied in this study to analyse the data. This is because the data of this study do not meet the conditions required for the parametric tests. Therefore, GLS instead of OLS regression is adopted as a multivariate test technique.

6.5.1 Results and Discussion of the First Model

Table 6.7 reports the GLS regression of discretionary accruals on board composition and ownership structure. The adjusted R2 obtained for this model is fairly comparable with those in similar studies, for example, those of Frankel *et al*. (2002), Ashbaugh, *et al*. (2003), Abdul Rahman and Ali, (2006) and Dimitropoulos and Asteriou (2010). The constant is negative and highly significant at $p<0.01$.

6.5.1.1 Board of Directors Composition

Board independence

Consistent with the first hypothesis that states there is a negative relationship between earnings management and the proportion of independent directors on the board, the result indicates that there is a negative and significant relationship (coefficient = -.046 and $p<.10$) between board

independence and the indicator of earnings management. This finding is in line with the previous findings of Klein (2002b), Xie *et al*. (2003), Peasnell *et al*. (2005), Davidson *et al*. (2005), Benkel *et al*. (2006), Dimitropoulos and Asteriou (2010) and Lo, *et al.* (2010) that boards with a high proportion of independent directors are negatively related to earnings management.

Nevertheless, the result is different from that of some studies conducted outside the Anglo-American countries, especially in Asian countries such as Malaysia (Abdul Rahman and Ali, *et al*., 2006), Indonesia (Siregar and Utama, 2008) and Hong Kong (Jaggi *et al*., 2009), where no significant relationship is found between outside directors and earnings management. The Asian results may be different due to the dominance of family-controlled firms in these countries, which may result in family dominance over board matters as a result of weak corporate governance regimes in countries with less investor protection, as discussed in the literature review chapter.

This result is consistent with previous UK findings by Peasnell *et al*. (2005) who indicate that the likelihood of managers making income-increasing abnormal accruals to avoid reporting losses and earnings reductions is negatively related to the proportion of independent directors on the board.

Board Meetings

Inconsistent with this study's expectation, the coefficients of BRDMEET are insignificant in all of the models. A possible explanation of this result is that the number of board meetings is an indication of the board's reaction to urgent business or special circumstances rather than an indication of the board's regular monitoring of the firm's financial reporting quality. This suggestion is supported by Lorsch and MacIver's (1989) survey of US firms' boards in the 1980s that presents evidence that the frequency of board meetings increases in times of crises and major challenges. Vafeas' (1999) empirical study of US boards in the early 1990s also suggests that one way in which boards react to poor performance and challenging business circumstances is by increasing the number of board meetings; the study provides evidence that the frequency of board meetings increase following financial distress.

Table 6.7 Results of the First Model

First Model Main Regression (GLS)				
DAC	Exp Signe	Coef.	z	P>z
Board Composition				
BRDIND	-	-0.046	-1.670	*
BRDMEET	-	0.001	1.010	
BRDSZE	-	-0.003	-1.920	**
WOMEN	-	-0.022	-0.620	
REMIND	-	0.009	1.230	
NOMIND	-	-0.043	-2.860	***
CHAIRCOD	+	0.009	1.230	
CHAIRIND	-	-0.016	-1.680	*
NED Commitment				
NEDFEE	-	-0.035	-2.530	***
NEDMEET	-	-0.005	-0.750	
Ownership Structures				
MANGOWN	-	-0.037	-0.980	
BLOCK	-	0.017	2.560	***
INSTOWN	-	0.000	1.090	
Control Variables				
SIZE	?	0.041	4.810	***
IFRS	?	-0.001	-0.200	
LEVG	?	-0.001	-3.690	***
GROWTH	?	0.002	0.230	
CFO	?	-0.203	-3.590	***
ROA	?	0.012	0.250	
_cons		-0.099	-2.240	***
Adj R-2	17%			
Wald chi2	71.74***			

In fact, this result suggests that directors now have a busier schedule of bureaucratic meetings that makes them less responsive to essential challenges and, indeed, less attentive to monitoring needs. This result supports the argument of Lipton and Lorsch (1992), who point out those board meetings are not necessarily functional because, given their limited time; they restrict the meaningful exchange of ideas among directors or with managers.

Taking the result of BRDSIZE into consideration, along with the result of the ineffective impact of BRDMEET, the non-binding of board meetings can have a joint interpretation. These results suggest that if the board size is large, board meetings may not be the best means of communication between directors. As the board size increases, there are more people to share the responsibilities but communication is less effective. Thereby, more board meetings may be more fruitful only for small-sized boards. Given that the board size is generally large in this study sample, as shown in the descriptive analysis, board meetings may not be very effective in monitoring management activities.

Therefore, this study argues that the number of meetings may not always be an effective characteristic of the board of directors. This is supported by previous findings. Adams *et al*. (2009) conducts a large survey to investigate directors' roles as advisors and monitors of management. He finds that directors who primarily monitor management perceive that they participate less in boardroom discussion during the meetings than other directors, and that the CEO often asks them for advice.

However, this result should not be interpreted as if the diligence of the board directors is an ineffective mechanism in constraining earnings management; there are many other measures of the board diligence that can not be captured by quantitative research methods. Carcello *et al*. (2002) concede that board diligence includes many more factors than mere board meetings, for instance, preparation before meetings, attentiveness, participation during meetings, and post-meeting follow-up. However, the number of board meetings is the only measure that is publicly available.

Board Size

This study finds that board size is significantly and negatively associated with earnings management. The result indicates that larger boards are more effective in monitoring financial reporting. This supports the argument of John and Senbet (1998) that an increase in board size increases the board's monitoring capacity. Large boards are likely to increase financial expertise and diversity on the board. Ebrahim (2007) finds that the independence of the audit committee is actually dependent on board size as the probability of having a totally independent audit committee is more pronounced in firms with a large board. This study's result also supports the findings of

Zahra and Pearce (1989) that board size can increase the independence of the board and counteract managerial entrenchment. Additionally, Salterio (2001) and Klein (2002a) argue that small board size limits the number of independent directors available to serve on the audit committee, and they report evidence that audit committee independence increases with the size of the board.

These findings support the argument presented by Zahra and Pearce (1989) that larger boards are more capable than smaller boards of monitoring the actions of management. Hence, smaller boards may be more likely to be "captured" by top managers or controlled by major institutional investors and blockholders, with the result that monitoring by the independent directors is weakened.

The negative association between large boards and the empirical indicator of earnings management is similar to the findings of Peasnell *et al*. (2005), Chtourou *et al*. (2001), Xie *et al*. (2003) and Yu (2008). They find that board size is strongly and negatively associated with lower levels of earnings management.

However, some evidence from Asian markets provided by Kao and Chen (2004) using Taiwan and Abdul Rahman and Ali, *et al* (2006) using Malaysia, shows a significant positive relationship between board size and the empirical indicator of earnings management. Both studies are conducted in less developed countries. Thus, these different results may be due to the different markets and corporate governance regimes in which these studies were based. Another plausible explanation for the opposite findings of these Asian based studies is that firms in developing countries are more family-controlled and they have more family members on their boards. Thus, an increase in the board size may not always lead to better governance.

Chairman Independence

Hypothesis 4 predicts that the chairman's independence (CHAIRIND) is negatively associated with the level of earnings management. The negatively signed coefficient ($\beta = 0.016$, $p < 0.10$) on CHAIRIND supports this study's argument and hypothesis. This suggests that the chairman's independence plays an important role in constraining earnings management behaviour.

In terms of the comparison between the chairmen's independence measured according to the Code's chairman independence criteria (CHAIRCOD) and the chairman's independence measured according to the Code's NED independence criteria (CHAIRIND), the latter is more effective in constraining earnings management. Interestingly, it is found that the Code's independence criteria might be loose since this study documents a positive but insignificant association between earnings management and CHAIRCOD. When the Code's NED independence criteria (which are stricter than its independence criteria for the chairman) are applied to the chairman, this study finds a significant negative relation between earnings management and chairman independence.

This result generally supports the argument of Abbott *et al*. (2004) and Fama & Jensen (1983) that an independent chairman (who is neither the firm's founder nor the CEO) can be expected to improve board monitoring by providing independent monitoring of the CEO's work. This result is also in line with the argument of Chau, *et al*. (2006) who find that concentrated decision-making power as a result of a non-independent chairman may impair the board's oversight and monitoring roles.

Board Gender Diversity

Hypothesis 5 predicts that the number of women directors on the board is negatively associated with earnings management. The insignificantly negative coefficient of the number of women directors does not support this hypothesis. Therefore, this study does not support the view that gender diversity leads to superior earnings quality.

Some previous studies document a positive effect of the role of women on boards and find that women enhance the quality of decision making (Smith *et al*., 2006; Huse & Solberg, 2006), that women are generally more risk averse than men (Watson and McNaughton, 2007); and that gender is a factor in ethical decision making (Ford and Richardson, 1994).

However, no study, including this one, documents an association between accrual quality and the presence of women on company boards. This may be due to the relatively small proportion of board members who are women (true also for the UK, as shown in the descriptive analysis section), which

does not permit them to be powerful enough to make a difference to monitoring. This finding may also support the view that women members are still treated as tokens of gender diversity rather than as a source of invaluable input to board activities.

However, this result does not necessarily contradict the notion that women's presence on firms' boards may be useful and positive in general. Nevertheless, it means that the low number of women on the boards of FTSE 350 firms does not give them sufficient monitoring power to reduce earnings management practice.

Nomination Committee Independence

Consistent with hypothesis 6 that there is a negative relationship between earnings management and the proportion of independent directors on the nomination committee, the result indicates a negative significant relationship (coefficient= -.043 and $p<.01$) between an independent nomination committee and earnings management.

This finding supports the regulatory stress on the importance of having independent nomination committees that increases the likelihood of the independence of the nominated directors. This result also supports theoretical arguments in prior studies that nomination committees can play a vital role in enhancing board members' independence and reducing the influence of management (Jensen, 1993 and Westphal, 1998). Additionally, this result indirectly contradicts Klein (2002b), who finds no relation between the presence of the CEO on the nomination committee and the incidence of earnings management. The limitations of Klein (2002b) were discussed in the literature review chapter.

However, this difference between Klein's (2002b) result and that of other studies may be due to a possible correlation between the nomination committee and the audit committee in her study that affects her result. She does not provide correlation analyses but the present study separates the nomination and audit committees in two models to avoid the high correlation that is found. It might also be due to both a better earnings management proxy employed by this study and the different method of measuring the nomination committee's effectiveness. Another possibility is that

nomination committees have become more effective as a result of the reforms in corporate governance since 1995, which was the basis for Klein's (2002b) study.

The significant results in this study for large board size, audit committee independence and nomination committee independence support the argument raised by Klein (2002a) that board sub-committee (i.e. audit committee and nomination committee) assignments are influenced by board size; large boards have more directors to contribute to the sub-committees and this enables the work load to be distributed over a greater number of directors.

Remuneration Committee Independence

Hypothesis 7 predicts a significant negative relationship between the occurrence of earnings management and a fully independent remuneration committee, as recommended by the Code. As reported in table 6.7, the hypothesis is not supported as no significant negative association is found between the occurrence of an earnings management and an independent remuneration committee.

Agency theory hypothesises that the independent remuneration committee has a key role in ensuring a fair and appropriate remuneration scheme, which, in turn, ensures that management ownership incentives are designed to increase the alignment of the interests of shareholders and management. Such an alignment helps to constrain management opportunistic behaviour such as earnings management.

However, though the proponents of the agency theory argue that high managerial ownership is a good governance mechanism and should have a negative effect on earnings manipulation; this study finds that managerial ownership has no effect on the level of earnings management. This result may indicate that the remuneration committees in this study's sample firms do not discharge their expected role effectively, or that they may be independent in appearance but not in fact.

However, this result supports the findings of many UK prior studies that document the lack of effectiveness of remuneration committees in the UK. Main and Johnston (1993) use a sample of 220 large publicly held British companies to examine the role of the remuneration committee in

British boardrooms. They find remuneration committees to be associated with higher levels of pay and no positive impact on the incentive structure of pay. Their result indicates a strong social influence that affects the remuneration payments approved by remuneration committees. Additionally, Forbes and Watson (1993) examine the UK system of corporate governance and executives' remuneration. Their study offers empirical evidence that the remuneration process is largely under the control of the executive directors themselves. A similar finding offered by Proned (1992) and based on an examination of the structure of remuneration payments (cash and stock options) is that there is no significant relationship between this and the existence of a remuneration committee. This argument is supported by Forbes and Watson (1993) who comment on the findings of the previously discussed studies that "There is little evidence that the current remuneration committees in the UK are having the desired effect".

In contrast, Klein (2002b), using data from 1991 to 1993 on earnings manipulation for a sample of 687 large, listed U.S. firms, finds a positive relation between the presence of the CEO in the remuneration committee and earnings management. However, this different result might be due to a possible correlation between the remuneration committee and the audit committee and /or the different measures of both dependent and independent variables that affected her results, as explained above. Another possibility is that remuneration committees may be more effective in the USA than in the UK.

All in all, even though the remuneration committee has been introduced in many countries to carry out an essential part of the governance required by recent recommendations on corporate governance, it seems that these committees have not yet achieved the degree of independence that enables them to discharge their duties adequately.

6.5.1.2 Non-Executive Directors' Commitment

Non-Executive Directors' Private Meetings

Hypothesis 8 predicts a significantly negative relationship between the occurrence of earnings management and NEDs' private meetings. As shown in table 6.7, the hypothesis is not supported.

No significantly negative association exists between the occurrence of earnings management and NEDs' private meetings but the coefficient shows a negative direction, as hypothesised.

A dummy variable taking the value of one if the NEDs meet without the presence of executive directors at least once a year, and zero otherwise, is used to determine the effect of these meetings. However, using a continuous variable may have allowed for the larger scope to capture the effect of such confidential meetings and thus the result might have been different. Unfortunately, there is insufficient disclosure to enable the researcher to examine this variable in continuous form; the majority of the study sample firms only disclose whether a meeting has taken a place or not and they do not specify the number of meetings that were held during the financial year.

The finding of NEDMEET may have two explanations. First, NEDs' private meetings may be a good indicator of the independent directors' diligence and commitment but the dummy variable could not capture the effect of these private meetings on earnings management. Secondly, as both board meetings and audit committee meetings do not show a significant effect on earnings management in this and many prior studies, meetings in general may not be a suitable measure of diligence and activity. This result may give some support to the argument that a great deal of independent director activity occurs outside of formal meetings (Gendron and Bédard, 2006; Spira, 2002; Turley and Zaman, 2007).

Non-Executive Directors' Fees

Using non-executive directors fees (NEDFEE) as a measure of independent directors' commitment, the result shows that NEDFEE is significantly (p-value = 0.01) and negatively related with the earnings management indicator (as hypothesised). This finding is consistent with the notion that committed independent outside directors are effective monitors of accrual management and that firms with highly paid outside directors tend to be less involved in accrual management.

This result confirms the study assumption that the workload of a NED contributes to the determination of the fees paid. NEDs who are required to spend more time and effort in the role expect to be remunerated accordingly. This finding, therefore, supports the UK regularity

recommendation on Greenbury's guidance that non-executive directors should be paid for their time and efforts.

This result provides modest support for the findings of Adams and Ferreira (2004) who use a large panel data set on directors' attendance at board meetings in publicly-listed firms for the period from 1996 to 2003. They provide robust evidence that directors are less likely to have attendance problems at board meetings when board meeting fees are higher. They suggest that directors appear to perform their monitoring roles for even very small financial rewards.

6.5.1.3 Ownership Structures

Managerial Ownership

According to the agency theory, hypothesis 10 predicts that managerial ownership (MANAGOWN) is negatively associated with earnings management. The coefficient on MANAGOWN is negative but insignificant. This coefficient remains negative in all the models. However, this hypothesis is not supported. This result may be because managerial ownership in this study sample is negligible. Table 6.2 shows a managerial ownership mean of .03 and a median of .08. Given this low level of managers' equity interest, it is unlikely that managerial ownership can mitigate the potential conflict of interests arising from the separation of control and ownership.

This result is inconsistent with that of Warfield *et al*. (1995) though they report a significantly higher managerial ownership mean of 21%. Additionally, the earnings management proxy is different in their study as they use a five-year average of prior period accruals, whereas this study uses the performance adjusted accruals model of Kothari *et al*. (2005). They report a mean of absolute discretionary accruals of 26%, which is much higher than the .05 of this study and significantly different to those of many other studies that report results that oppose their findings.

The evidence on directors' ownership is mixed, and some previous studies have even found that managerial ownership is positively related to discretionary accruals (Gul *et al*., 2003; Bergstresser and Philippon, 2006; Ronen *et al*., 2006).

This study's result is identical to that of the most recent study in the UK (Laux and Laux, 2009) that finds no affect of managerial ownership on earnings management. Their results show that an increase in CEO equity incentives does not necessarily increase earnings management.

Additionally, this study's result is consistent with previous findings in the UK of Peasnell *et al*. (2005) who hypothesise that the constraining association between earnings management and an independent board and independent audit committee will be more pronounced when the level of managerial share ownership is low. They do not document a direct relationship between earnings management and managerial ownership. Although, this study uses a different measure of managerial ownership to that of Peasnell, *et al* (2005), both findings reveal the same result.

These results, along with the previous UK findings, do not support agency theory predictions but they are in harmony with the stewardship perspective that professional managers and shareholders do not have any conflict of interest and that there is a convergence between managers' interests and organisational goals (Donaldson & Davis, 1994; Davis *et al*., 1997).

Institutional Investors' Ownership

Prior research points out that institutional investors focus on the long-term value of stocks (Bushee, 1998). Research also indicates that institutional investors are more sophisticated investors and have better access to financial information (El-Gazzar, 1998; Bartov *et al*., 2001). Therefore, institutional ownership in the firm is considered to contribute to good corporate governance and serve as an additional monitoring mechanism of the financial reporting process. This study's result does not support this stream of research as INSTOWN is found to be insignificant in all models examined.

The majority of the evidence documented in the previous literature is that institutional ownership has a negative effect on earnings management. Examples are the studies of Rajgopal and Venkatachalam (1998), Bushee (2001), Yu (2008) and Charitou *et al*. (2007) using U.S. data; Koh (2003) and Koh and Hsu (2005) using Australian data; Park and Shin (2004) using Canadian firms; and Osma and Noguer (2007) using Spanish data.

This result does not support the hypothesis that institutional ownership constrains EM. However, this result is consistent with the previous UK evidence of Peasnall *et al*. (2000) and Peasnall *et al*. (2005) who find that no association between accruals and institutional investors. This may raise questions about the role and the characteristics of British institutional investors and their awareness of, and reaction to, management discretion.

A reasonable explanation of the no-finding result for institutional ownership in this study is the different characteristics and strategies of UK and US institutional investors. Ferreira and Matos (2006), as cited in Khurshed *et al*. (2007), investigate firm and country level characteristics for types of firms that attract institutional investors globally. They find that institutional investors prefer large, liquid stocks with good corporate governance practice. However, Khurshed *et al*. (2007) show that UK institutional investors prefer smaller firms, firms with smaller boards, and firms with a shorter listing history and low trading liquidity. They also find that UK institutional investors are negatively associated with dividend yield after the tax exemption of dividend income was terminated. This finding also supports the result of Short and Keasey (1999) who demonstrate fundamental differences in corporate governance practice in the US and UK and argue that these differences have contributed to a very different non-linear relationship between ownership and firm performance in the two countries.

Another possible explanation for the difference between the findings of this study and the previous US, Canada and Australian findings, on the other side, is different measurements of both institutional ownership and earnings management. Prior studies measure the institutional ownership in different ways, such as institutional non-blockholders and active institutional blockholders, and they measure earnings management differently, such as using R&D spending and the modified Jones model, without adjusting for firm performance. Nevertheless, in the robustness check, this study examines the non-linear relationship between institutional ownership and earnings management to investigate whether a 'U' relationship exists, as some prior studies have suggested.

Blockholders' Ownership

Surprisingly, and contrary to hypothesis 12, blockholders' ownership is found to be positively related to earnings management at a 1% level. This contradicts the hypothesis that blockholders benefit the firm by aligning the interests of shareholders and directors.

The agency framework developed by Jensen and Meckling (1976) argues that the existence of large shareholders can be expected to lower opportunistic earnings management. However, the opposite relationship between blockholders ownership and earnings management found in this study suggests that blockholders ownership is not as effective as propagated by agency theorists in reducing agency problems, and particularly in constraining earnings management. Empirically, many previous studies could not document any effect of the blockholder in preventing opportunistic earnings management (Park and Shin, 2003; Abdul Rahman and Haniffa, 2005; Abdul Rahman and Ali, 2006). In the UK context, Goergen *et al*. (2005) study the corporate governance system and assert that the way in which the ownership of listed companies is concentrated in the hands of corporate directors and of passive institutional investors creates its own type of agency problems.

This result is consistent with the findings of the recent study of Zhong *et al*. (2007) who use a large sample of US firms from 1994 to 2003 to examine the two competing views concerning the effect of blockholders on earnings management. The first view is that outside blockholders, with a higher motivation and ability to monitor managers' actions than small shareholders, might reduce earnings management. The second view states that outside blockholders require a higher return from firms in their portfolio and, because they pose an intervention threat to the firm's management, they may increase managers' incentives to conduct income-increasing earnings management. Zhong *et al*. (2007) reveal a result that is consistent with the second view, indicating that outside blockholders ownership is positively associated with discretionary accruals. As a robustness test, they use a dummy variable of BLOCK using 20%, 25%, and 30% cut-off points to test for the non-linear effect of ownership, and different measures of earnings management, and they still do not find a different result.

This result is also consistent with the empirical findings of Yu (2008) who uses the percentage of stocks owned by the largest blockholders and investigates its association with discretionary accruals. The earnings management level of a firm with large shareholders is found to be higher than that of a firm without large shareholders by 17% of the sample mean and 30% of the median.

One possible conjecture concerning this result is that large shareholders may expropriate the interests of other investors and stakeholders by colluding with management, as observed by Shleifer and Vishny (1997). Furthermore, concentrated ownership enables blockholders to use accounting information to their own advantage; for instance through income-decreasing in order to diminish the other shareholders' residual claims (Claessens *et al*., 2000).

Zhong *et al*. (2007) suggest that another possible explanation of this contrasting result is that the positive association between blockholders and discretionary accruals is caused by the positive relationship between estimated discretionary accruals and earnings volatility. Zhong *et al*. (2007), suggests that blockholders may be positively associated with earnings volatility because firms with more volatile earnings need patient and dedicated investors who are not sensitive to short-term performance volatility which support the previously discussed argument of Khurshed *et al*. (2007) in the institutional ownership section above.

6.5.2 Results and Discussion of the Second Model

The second model of this study examines the association between discretionary accruals, as an indicator of earnings management, and external auditor factors and audit committee effectiveness. Table 6.8 reports the GLS regression results for this model. The adjusted R2 obtained in this model is fairly comparable with those in similar studies, for example those by Frankel *et al.* (2002) and Ashbaugh, *et al.* (2003). The constant is negative and significant at ($p<0.10$).

6.5.2.1 Audit Committee Effectiveness

Audit Committee Independence

Hypothesis 13 expects that audit committee independence (AUDIND) is negatively associated with the level of discretionary accruals. As expected, a negative association between (AUDIND) and the empirical indicator of earnings management is found ($\beta=0.040$, $z=2.65$, $p<0.01$).

This result is consistent with US and Australian findings (Klein, 2002a; Bedard *et al.*, 2004; Benkel *et al.*, 2006), and with international evidence on the importance of an independent audit committee. Bradbury (2006) uses 139 firms from Singapore and 113 firms from Malaysia while Piot and Janin (2007) uses a sample of SBF 120 Index French companies and both studies find that audit committee independence is an effective attribute on constraining earnings management practice.

However, there are opposite findings. Abdul Rahman and Ali *et al.* (2006) use 97 Malaysian firms and find insufficient evidence of a negative relationship between earnings management and independent audit committees. Their result may be influenced either by different types of earnings management or the small size of their sample. Despite this study, there is global acceptance of the view that that audit committee independence helps to reduce earnings management.

Peasnell *et al.* (2005) examine whether the incidence of earnings management by UK listed firms in fiscal years ending between 1993 to1996 depends on outside board members and the existence of an audit committee. They find no evidence that the presence of an audit committee directly affects the extent of income-increasing manipulations to meet or exceed these thresholds; audit committees also do not appear to have a direct effect on the degree of downward manipulation when pre-managed earnings exceed these thresholds by a large margin. Peasnell *et al.* (2005) offer the conjecture for

their failure to detect an audit committee effect that it might be because the great majority of firms in their sample have such a committee. However, their results are based on the mere existence of an audit committee and they do not research its independence and competence, which are two factors that can greatly enhance the efficiency of the monitoring process and, thus, a reduction in earnings management.

Given that, primarily, large board size, audit committee independence and nomination committee independence display significant results, the findings of this study augment the argument raised by Klein (2002a) that board sub-committee (i.e. audit committee and nomination committee) assignments are influenced by board size since large boards have more directors to contribute to the sub-committees, which are then able to distribute the work load over a greater number of directors.

Audit Committee Financial Expertise

Hypothesis 14 predicts that audit committee expertise (AUDEXP) is negatively associated with the level of earnings management. The negatively signed coefficient ($\beta = 0.022$, $Z=2.62$, $p < 0.01$) on AUDEXP supports this hypothesis. This suggests that the presence of a financial expert on the audit committee plays an important role in carrying out the committee's monitoring responsibility and in constraining earnings management behaviour. Thus, the result suggests that audit committees that include at least one member with financial expertise are likely to discourage management from manipulating the earnings figures in annual reports.

This finding supports the recommendations of the UK Corporate Governance Combined Code (2003) that audit committees should include at least one member with relevant financial experience in order to be effective monitors of the financial reporting process. It also supports the findings of Song and Windram's (2004) evaluation of the proposals of the Cadbury Committee (1992) in the UK and the Blue Ribbon Committee (1999) in the US relating to audit committees. They examine the effectiveness of UK audit committees in improving the quality of financial reporting and documented that financial literacy is an important determinant of the audit committee's effectiveness. This result is also consistent with the vast majority of the previous research that investigates the effect of financial experts on earnings management, such as that of Choi *et al.*

(2004), Park and Shin (2003), Carcello *et al.* (2006), Chen (2007), Baxter and Cotter (2009) and Lo *et al.* (2010).

However, it contrasts with the finding of Abdul Rahman and Ali *et al.* (2006) that there is evidence of a negative relationship between earnings management and the presence of a financial expert on the audit committee. Their result may be due to the type of earnings management they examined or to their small sample size of only 97 companies.

Audit Committee Size

No significant relationship is found between audit committees size (AUDSIZE) and the level of discretionary accruals. This result may support the argument that larger audit committees do not significantly enhance the quality of financial reporting.

This result is inconsistent with prior research that finds that larger audit committees are associated with lower quarterly earnings management (Yang and Krishnan, 2005), fewer earnings restatements (Lin *et al.*, 2006) and enhanced financial reporting quality (Felo *et al.*, 2003). However, this result is similar to that of the vast majority of studies, such as those of Xie *et al.* (2003), Abbott *et al.* (2004), Bédard *et al.* (2004), Davidson *et al.* (2005) and Baxter and Cotter (2009), that examine the effect of audit committees size on earnings management, and fail to find a significant impact of audit committee size on earnings management.

However, although no statistically significant relationship is detected, a negative directional sign of the coefficient is observed, which, along with the significant negative finding of the univariate test, lends modest support to hypothesis 15 that large audit committees may improve accounting reporting quality.

Audit Committee Meetings

The tests for hypothesis 16 regarding the relationship between the number of audit committee meetings (AUDMEET) and earnings management show insignificant relationships. This result may support the argument that the number of audit committees meetings does not significantly enhance

the quality of financial reporting. However, although no statistically significant relationship is detected, a negative directional sign of the coefficient is observed.

This result is similar to that of Davidson *et al.* (2005) who report an insignificant relationship between the number of audit committee meetings and earnings management. Additionally, Abdul Rahman and Ali *et al.* (2006) find insufficient evidence for a negative relationship between earnings management and the frequency of audit committee meetings. It is also similar to the finding of Baxter and Cotter (2009) who investigate whether audit committees are associated with earnings quality in Australia. They use two measures of earnings quality, based on the Jones (1991) and Dechow and Dichev (2002) models. Their results indicate no association between audit committee meetings and both earnings quality measures. As discussed in the literature chapter, the vast majority of studies that investigate the relationship between earnings management and audit committee meetings document that no association exists. This result is also in line with the conclusion of Spira (1999) that audit committee meetings are largely ceremonial and that they are largely ineffective in improving financial reporting.

Although Ebrahim (2007) does not document a direct relationship between earnings management and the number of audit committee meetings, he examines the relationship between earnings management and the activity of both the board and the audit committee. Using a sample of manufacturing companies, he finds that earnings management is negatively related to both board and audit committee independence and documents that the negative relationship between board and audit committee independence with earnings management is stronger when the audit committee is more active. However, this result is not valid for board activity. Thus, audit committee meetings may have an indirect effect on earning quality and this is examined in the sensitivity analysis section under the audit committee aggregate score.

The finding of AUDMEET may have another explanation. The number of meetings may not be a good indicator of the audit committee's diligence and activity; this mirrors earlier comments in this and other studies that neither board meetings nor NEDs' private meetings show a significant effect on earnings management.

Instead, this result may provide some support for the argument that a great deal of independent director activity occurs outside of formal meetings (Gendron and Bédard, 2006, Spira, 2002 and Turley and Zaman, 2007). The latter use a case study approach, interviewing nine individuals at one UK company, including the audit committee chair, internal and external auditors, and senior managers. They find that the audit committee's greatest impact comes through informal processes. They report that audit committee members tend not to raise complex, probing questions or views during board or audit committee meetings, but they influence governance outcomes through informal meetings with the auditors.

6.5.2.2 External Audit Factors

Audit and Non-Audit Fees

In this model, the coefficient on the first measure of non-audit fees (NAF1) is positive and significant (β=0.017, z=2.46, p<0.01), suggesting that, as the magnitude of non-audit fees generated by a client increases, the level of discretionary accrual increases. This result supports hypothesis 17.

The coefficient on the first measure of audit fees (AF1) is negative and significant (β=0.028, z= -2.99, p<0.01), suggesting that, as the audit fees generated by a client increases, the level of earnings management decreases. This result supports hypothesis eighteen.

These results suggest that when a client generates relatively higher levels of non-audit fees compared to the fees received from all other clients of the audit firm, the level of earnings management increases. They also suggest that, for clients who are a significant source of revenues for the audit firm, particularly fees from non-audit services, there appears to be greater discretion over financial reporting by the auditor. This is consistent with the regulatory concern that non-audit fees impair auditor independence.

This study uses several methods to measure both audit and non-audit fees. The second method of measurement for the non-audit fees variable is the proportion of non-audit fees in the total fees (NAF2), and the measurement of the audit fees variable is the proportion of audit fees in the total

fees (AF2). The multivariate analysis in table 6.8 also shows the results for these alternative variables.

NAF2 and AF2 are not included in the same model as this would introduce a high level of multicollinearity into the analysis. The results for both variables support the main findings, namely, that non-audit fees have a significant and positive relationship with earnings management, while audit fees show a negative and significant association with earnings management.

These client-importance based findings are generally consistent with prior UK evidence, such as that of Srinidhi and Gul (2007). The auditor impairment results are also consistent with those of Sharma (2001) and Sharma and Sidhu (2001) who report that auditors are more willing to issue positive audit opinions to clients that generate greater non-audit fees, and with Dee *et al.* (2006) who find that higher proportions of non-audit fees are associated with higher income-increasing accruals, implying lower quality of earnings.

The negative audit fees result is also consistent with Stanley and DeZoort (2007) who document an inverse relation between audit fees and the likelihood of financial restatements. It is also similar to Gul *et al.* (2003) who use 648 Australian firms; their regression results show a negative association between earnings management and audit fees. This supports the argument that the auditing market is more regulated than the non-audit services market (Srinidhi *et al.*, 2007). It also supports the view that audit fees are more likely to reflect auditing efforts, which in turn produce better accrual quality.

Comparing the result with previous UK studies, this result is consistent with all prior UK evidences; these results are similar to Gore *et al.* (2001) who report a positive association between non-audit fees, measured as the ratio of non-audit fees to total audit fees, and earnings management for non-Big 5 clients, but not for Big 5 clients. In addition, this result is inconsistent with the evidence of Antle *et al.* (2006) find that higher non-audit fees, as measured by the ratio of non-audit to audit fees, increase abnormal accruals while higher audit fees decrease abnormal accruals. These results are also consistent with prior UK evidence by Ferguson *et al.* (2004) who document a positive association between NAF and discretionary accruals.

This result supports the stream of research that argues that NAF can impair auditor independence in appearance, as argued by Solomon *et al.* (2005), Francis (2006), Lai and Krishnan (2009) and Quick and Warming-Rasmussen (2009). It also supports the concern of regulatory bodies, such as the SEC, that NAF may be a threat to auditor independence.

All in all, this study's result supports the large number of previous research findings, such as those of Gore *et al.* (2001), Frankel *et al.* (2002), Larcker and Richardson (2004), Solomon *et al.* (2005), Cahan *et al.* (2008) and Quick and Warming-Rasmussen (2009), that auditors are perceived to be less independent when they provide additional services. Furthermore, this is consistent with regulatory concern that non-audit fees impair the auditor's independence.

Specialised Auditor

Hypothesis 19 expects that auditor industry specialisation is negatively associated with the level of discretionary accruals. As expected, SPEAUD (β=0.019, z=1.86, $p<0.05$) shows a negative significant association with the level of discretionary accruals. However, the second measure of specialised auditor, based on the number of audited firms for each auditor, does not show a significant association with discretionary accruals. The first measure of specialised auditor is more sophisticated and has been used extensively in the prior research, whereas the second measure may not reflect client–specific knowledge as it is based only on the number of clients regardless of their importance and the complexity of their operations.

This result supports the concerns about reduced audit quality due to a lack of client-specific knowledge. It is consistent with evidence suggesting that auditor industry specialisation is positively related to financial reporting quality (e.g., Elder and Zhou, 2002; Balsam *et al.*, 2003; Krishnan, 2003; Stanley and DeZoort, 2007; Bloomfield and Shackman, 2008; Gul *et al.*, 2009), greater compliance with auditing standards (O'Keefe *et al.*, 1994), disclosure quality (Dunn and Mayhew, 2004), and concern about reputation losses and litigation exposure (Lim and Tan, 2007).

6.5.3 Control Variables: Results and Discussion

This section discusses the results for the control variables in both models; they are dealt with together since they are the same control variables and they show broadly similar results. Tables 6.4 and 6.5 present the control variable results. All control variables are subjected to a number of multivariate tests in both models in order to determine whether additional company characteristics have any effect on earnings management. The results are generally consistent with findings in the prior literature.

CFO and SIZE are statistically significant in both models, while GROWTH and IFRS do not exhibit any statistically significant differences in either model. Furthermore, LEVG and ROA produce inconclusive results, in that no significance is detected through the tests of one of the models and significance is identified in the other model. The next section presents and discusses the result for each control variable.

Firm Performance (ROA)

The result for ROA shows inconclusive results for the effect of performance on the earnings management indicator. The first model finds an insignificant positive relationship while the second model finds a significant positive relationship.

This later result is consistent with the prior studies that find that firms with a strong performance are more likely to manage discretionary accruals (Dechow *et al.*, 1995). Kasznik (1999) suggests that firm performance tends to have a positive relation with DAC.

Table 6.8 Second Model Main Test (GLS)													
DAC	Exp sign	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z
Audit committee Effectiveness													
AUDIIND	-	-0.040	-2.650	***	-0.043	-2.920	***	-0.046	-3.040	***	-0.040	-2.600	***
AUDEXP	-	-0.022	-2.620	***	-0.023	-2.770	***	-0.023	-2.770	***	-0.022	-2.600	***
AUDSIZE	-	-0.003	-0.750		-0.005	-1.250		-0.005	-1.310		-0.003	-0.600	
AUDMEET	-	-0.002	-0.770		-0.002	-0.680		-0.002	-0.760		-0.003	-0.920	
External Audit Factors													
NAF1	+	0.017	2.460	***							0.017	2.430	***
AF1	-	-0.028	-2.990	***							-0.028	-3.020	***
NAF2	+				0.036	2.360	***						
AF2	-							-0.035	-2.250	***			
SPEAUD1	-	-0.019	-1.860	**	-0.018	-1.800	*	-0.017	-1.660	*			
SPEAUD2	-										-0.003	-0.380	
Control Variables													
MANGOWN	?	-0.011	-0.260		0.009	0.230		0.020	0.480		-0.012	-0.300	
IFRS	?	-0.008	-1.030		-0.008	-1.090		-0.009	-1.200		-0.007	-1.000	
SIZE	?	0.034	3.860	***	0.033	3.820	***	0.032	3.710	***	0.034	3.900	***
LEVG	?	0.000	1.210		0.000	1.170		0.000	0.910		0.000	1.000	
GROWTH	?	-0.013	-1.530		-0.012	-1.340		-0.012	-1.400		-0.013	-1.430	
CFO	?	-0.265	-4.220	***	-0.275	-4.460	***	-0.303	-4.830	***	-0.261	-4.140	***
ROA	?	0.102	1.900	**	0.095	1.790	*	0.102	1.890	**	0.098	1.810	*
_cons		-0.082	-1.410	*	-0.083	-1.460	*	-0.041	-0.700	*	-0.087	-1.490	*
Adj R-2	19%	17%						17%			18%		
Wald chi2	51.24***	63.22***						62.46***			58.47***		

Firm Size (SIZE)

Prior studies suggest that large firms have more pressure on their management to report more predictable earnings (Pincus and Rajgopal, 2002). Thus, managers are likely to engage in earnings management to achieve this predictability. Consistent with prior studies' findings such as Dimitropoulos and Asteriou (2010) and with expectations of agency theory, SIZE is found to have a significant positive relationship with earnings management at a level of p=.01 in both models.

Leverage (LEVG)

Leverage represents the debt structure of a company and is used in numerous studies as a measure for debt covenant violations (Erickson *et al.*, 2004; Elayan *et al.*, 2008). In this study, highly leveraged companies are found to be less involved in fraudulent practices, such as earnings management.

This result is consistent with Becker *et al.* (1998) who find that leverage is negatively associated with the absolute value of discretionary accruals. The negative relationship between leverage and discretionary accruals is consistent with a conservative accounting attitude that responds to debt holders' concerns in assessing potential loans, or in monitoring borrowers' ability to pay back existing loans (Watts, 2003). Even though firms close to violating debt constraints have incentives to manage earnings upward to meet debt covenants, their opportunities to manage earnings may be more limited.

In the second model, LEVG shows an insignificant relationship with earnings management, which is consistent with the finding of Jiang *et al.* (2008) who suggests that leverage changes may have differing impacts on earnings management.

Firm Growth (GROWTH)

Previous studies have shown inconclusive results on the expected effect of a firm's growth on discretionary accruals (e.g. Abbott *et al.*, 2004; Carcello *et al.*, 2004 and Ashbaugh *et al.* 2006). GROWTH shows no significant relationship with discretionary accruals, which is the same as the univariate analysis result using the Mann Whitney non-parametric test.

Cash Flow from Operations (CFO)

The result shows that CFO is significantly (p-value = 0.01) and negatively related with the earnings management indicator. This finding is consistent with the notion that CFO influences the magnitude of the discretionary accruals. It is also consistent with the prior studies that find that firms with a strong CFO performance are less likely to manage discretionary accruals because they are already performing well (Jiang *et al.*, 2008; Lobo and Zhou, 2006 and Becker *et al.*, 1998)

International Financial Reporting Standards (IFRS)

No significant relationship is found between IFRS and the level of discretionary accruals. This result may support the argument that the introduction of the IFRS did not make a significant difference to the British companies in terms of earnings manipulation. However, although no statistically significant relationship is detected, a negative directional sign of the coefficient is observed in both models, thus lending modest support to the notion that the introduction of IFRS may have improved accounting reporting quality.

It is difficult to compare this result with prior studies as no study has examined the effect of IFRS on discretionary accruals in the UK or a similar institutional context. Different countries have different accounting standards and a comparison of the earnings management level prior to and post the new accounting standards can be expected to produce different results. However, this result is inconsistent with the findings of Barth *et al.* (2008) who used Germany as a case study

6.5.4 Further Analyses and Robustness Checks

6.5.4.1 Alternative Measurement of Earnings Management

In addition to applying the Kothari *et al.* (2005) model of estimating DAC using total accruals (TAC), this study applies the same model using only the current accruals (CAC).

Guenther (1994) and Becker et al. (1998) suggest that management have greater discretion over current accruals than long-term accruals. In the UK, Gore et al., (2007) find that discretionary working capital accruals have the effect of significantly increasing the frequencies of firms achieving earnings targets both overall and by small margins. Sloan (1996) reports that most of the variations in

total accruals are driven by current accruals. Current accruals adjustments involve current assets and liabilities that support the daily operations of the firm. In addition, Peasnell *et al*., (1998) argue that working capital accruals include such judgmental items as provisions for doubtful debts, warranties and inventory obsolescence, which prior research shows are used to manage earnings (e.g. McNichols & Wilson, 1988).

Current accruals can be manipulated easily by managers, for example, through advancing revenues recognition before receiving the cash or by delaying expenses recognition through low provision for bad debts. Therefore, discretionary current accruals may be a superior proxy for earnings management than discretionary long-term accruals. Ashbaugh *et al.* (2003), and some recent other studies, focus on the discretionary current accruals by applying the modified Jones model using current accruals instead of total accruals as a dependent variable, after eliminating property, plant and equipment (PPE) from the model. Consistent with Ashbaugh *et al.* (2003), this study measures current accruals by net income before extraordinary items, plus depreciation and amortisation, and minus operating cash flows, scaled by lagged total assets.

Due to the fact that this study does not examine any particular event and focuses on the magnitude rather than the direction of earnings management, the absolute value of DAC as a dependent variable is used. In addition, the absolute value is used because earnings management can involve either income increasing or income decreasing accruals to meet earnings targets (Warfield et al., 1995; Klein, 2002b and Dimitropoulos and Asteriou 2010). Examples of recent studies that use this measure include those of Klein (2002b), Chung & Kallapur (2003), Benkel et al. (2006), Choi and Lee (2009) and Dimitropoulos and Asteriou (2010). The estimation of this model follows these equations.

$$CAC_{it} / TA_{it-1} = \acute{\alpha} (1 / TA_{it-1}) + \beta 1 (\Delta REV_{it}) / TA_{it-1} + \varepsilon_{it}$$

Dechow *et al.* (1995) test several models for detecting earnings management and find that adding the change in receivables to the Jones model leads to a more powerful measure to detect earnings management. Therefore the change in receivables (Δ REC) is added to the previous equation, thus:

$$CAC_{it} / TA_{it-1} = \alpha (1 / TA_{it-1}) + \beta 1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \varepsilon_{it}$$

Additionally, Kothari *et al.* (2005) argue that the DAC, as estimated by both the Jones and the modified Jones models, may result in severe measurement error in DAC when these models do not control for the prior performance of the company. They propose a model that includes an intercept and control for the firm's performance using the lag of return on assets (ROA) to mitigate the problematic heteroskedasticity and mis-specified issues of the Jones and the modified Jones models in estimating accruals.

Following Ashbaugh *et al.* (2003), this study adds the return on assets of the previous year (ROA) as an additional regressor to the cross-sectional modified Jones model in the current accrual model. Thus, the final equation to calculate the current discretionary accruals (CDAC) is as follows:

$$CAC_{it} / TA_{it-1} = \alpha (1 / TA_{it-1}) + \beta 1 (\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1} + \beta_2 ROA_{it-1} + \varepsilon_{it}$$

First Model Results Using the Alternative Proxy of Earnings Management

The Ashbaugh *et al.* (2003) model is used to calculate earnings management, and then the same model is re-tested as an additional analysis that investigates the effect of the board of directors' composition and ownership structure variables in constraining current earnings management practice. Table 6.9 reports the GLS regression of current accruals on the board composition and ownership structure variables. The adjusted R2 obtained in this model is fairly comparable with Ashbaugh *et al.* (2003) and Dimitropoulos and Asteriou (2010).

Consistent with the main test, the coefficient on board independence (BRDIND) is negative and significant (β=0.041, z= -1.59, p<0.10), suggesting that, as the number of independent directors in a firm increases, the level of current accruals decreases. Additionally, board size (BRDSIZE) shows a significant negative relationship with the level of earnings management, as in the main model. Furthermore, the coefficient of independent nomination committee (NOMIND) is negative and significant (β=0.028, z= -1.97, p<0.05), suggesting that an independent nomination procedure constrains the level of the current accruals. This suggests that the board characteristics previously

found, in the main model, to affect the long term discretionary accruals, continue to have the same affect on current discretionary accruals.

Consistent with the main test, CHAIRIND is negatively associated with the level of current discretionary accruals. The coefficient on CHAIRIND is stronger, as it is significant at the p=0.01 level, compared with p=0.10 in the main model. The second measure of chairman independence, based on the Combined Code independence criteria for chairmen (CHAIRCOD) also does not show a significant association with current discretionary accruals as predicted.

In terms of the NED's commitment variables, consistent with the main test, NEDs' fees (NEDFEE) shows a negative significant relationship with current discretionary accruals at a 10% level, which is lower than the significance level in the main model. NEDMEET still shows no significant association with different measures of earnings management. This enhances the main test findings regarding the importance of NEDs' fees as a measure of NED's efforts and commitment in constraining earnings management behaviour.

Interestingly, BLOCK does not show a significant positive relationship with the second indicator of earnings management, which may make the main test findings sensitive and inconsistent with different types of accruals. This result suggests that blockholders may apply pressure on the management for long-run return but not for short-term or current benefits.

Additionally, as previously found in the main test, other control variables show the same directions and significance in relation to the second measure of earnings management except for leverage LEVG and ROA. The former shows the same direction but with a coefficient below the significance level (p value = 0.17) and the latter shows a significant positive association with the current accruals.

Second Model Results Using Alternative Proxy of Earnings Management

The Ashbaugh *et al.* (2003) model is used to calculate earnings management, and then the models are retested as an additional analysis that investigates the effect of the external auditor and audit committee variables in constraining current earnings management practice. Table 6.9 reports the

GLS regression of current accruals on the external auditor and audit committee variables. The adjusted R2 obtained in this model is fairly comparable with that in similar studies, for example those of Frankel *et al.* (2002) and Ashbaugh *et al.* (2003). The constant is negative and highly significant at $p<0.01$.

In terms of audit committee characteristics, consistent with the main test, both audit committee independence and expertise show a negative significant relationship with current discretionary accruals at a 1% level. This enhances the previous findings in the main test about the importance of these two variables in constraining current earnings management behaviour. Additionally, as previously found in the main test, both audit committees size and number of meetings do not appear to have a statistically significant effect on the current earnings management indicator.

Consistent with the main test, the coefficient on non-audit fees (NAF) is positive and significant ($\beta=0.021$, $z=2.72$, $p<0.01$), suggesting that, as the relative non-audit fees generated by a client increases, the level of current accrual increases. The coefficient on audit fees (AF) is negative and significant ($\beta=0.021$, $z= -2.12$, $p<0.05$), suggesting that, as the relative AF generated by a client increases, the level of current accruals decreases. These results suggest that when a client generates relatively higher levels of non-audit fees compared to the fees received from all other clients of the audit firm, the level of earnings management increases. This result also suggests that clients that are a significant source of revenues for the audit firm, particularly fees from non-audit services, appear to permit greater discretion over financial reporting by the auditor. Thus, this is consistent with regulatory concern that non-audit fees may impair the auditor's independence.

Additionally, consistent with the main test, auditor industry specialisation is negatively associated with the level of current discretionary accruals. The coefficients on SPEAUD are $\beta=0.020$, $z= -1.87$ and $p<0.05$. However, the second measure of specialised auditor, based on the number of firms audited by each auditor, does not show a significant association with current discretionary accruals. Other control variables show the same direction and significance as in the main model.

Table 6.9 Alternative EM Proxy (Current Accruals)									
First Model					Second Model				
CDAC	Exp singe	Coef.	z	P>z	CDAC	Exp singe	Coef.	z	P>z
BRDIND	-	-0.041	-1.590	*	NAF1	+	0.021	2.720	***
BRDMEET	-	0.002	1.320		AF1	-	-0.021	-2.120	**
BRDSZE	-	-0.004	-2.310	**	SPEAUD1	-	-0.020	-1.870	**
WOMEN	-	-0.044	-1.280		AUDSIZE	-	-0.003	-0.720	
REMIND	-	0.009	1.290		AUDMEET	-	-0.001	-0.290	
NOMIND	-	-0.028	-1.970	**	AUDIIND	-	-0.041	-2.570	***
CHAIRND	-	-0.017	-2.610	***	AUDEXP	-	-0.019	-2.240	***
CHAIRCOD	+	-0.003	-0.340		MANGOWN	?	-0.007	-0.170	
NEDFEE	-	-0.021	-1.630	*	IFRS	?	-0.011	-1.420	
NEDMEET	-	0.001	0.220		SIZE	?	-0.022	-2.570	**
MANGOWN	-	-0.028	-0.800		LEVG	?	0.000	1.820	*
BLOCK	-	0.009	1.510		GROWTH	?	-0.013	-1.490	
INSTOWN	-	0.000	0.670		CFO	?	-0.300	-4.630	***
SIZE	?	0.019	2.320	**	ROA	?	0.140	2.550	***
IFRS	?	-0.008	-1.310						
LEVG	?	0.000	-1.100						
GROWTH	?	0.001	0.200						
CFO	?	-0.372	-6.980	***					
ROA	?	0.235	5.230	***					
_cons		0.020	0.480		_cons		0.251	4.420	***
Adj R-2		17%			Adj R-2		17%		
Wald chi2		73.25***			Wald chi2		61.94***		

6.5.4.2 Signed Earnings Management Test

Following Ashbaugh *et al.* (2003) and Gul *et al.* (2006), this research partitions the earnings management sample into firms with positive (income-increasing) discretionary accruals and firms with negative (income-decreasing) discretionary accruals, as the incentives to manage earnings could be different for the two directions. This partition provides evidence on whether or not there is any differential relation between the corporate governance and external auditor variables with discretionary accruals and whether they are conditional on income-increasing or income-decreasing accruals.

The First Model Results of Signed Earnings Management Test

Table 6.10 reports the GLS estimate of both income-increasing and income-decreasing discretionary accruals on corporate governance variables and ownership structures. The adjusted R2 obtained in this model is fairly comparable with that in similar studies, for example those of Dimitropoulos and Asteriou (2010). The constant is negative and highly significant at $p<0.01$ and $p<0.10$, respectively.

Consistent with the main test result for the absolute value of discretionary accruals, both the income-decreasing and income-increasing models find a negative coefficient on BRDIND and NOMIND. This result supports the view that the board characteristics used in this study are effective in reducing both income-decreasing and income-increasing accruals behaviour. The results for both attributes show a significant negative coefficient at 1% level in the income-decreasing sample but a negative significant at only a 10% level in the income-increasing sample. This may imply that the board of directors' characteristics and the nomination committee's independence are more effective in constraining the income-decreasing type of managers' discretion. Moreover, BRDSZE show insignificant relationship with either direction of EM. Board size seems to be more effective in constraining EM in total but not in a particular direction.

The relation between earnings management and chairman independence differs based on the earnings management direction. In the income-decreasing practice, CHAIRIND still has a negative and significant relation with negative discretionary accruals, as in the main results. However, CHAIRIND has no effect on reducing the income-increasing practice. Interestingly, the chairman's

independence according to the Code (CHAIRCOD) has a positive and significant relationship (coefficient = .028, z=2.54 and p = .01) with positive discretionary accruals, a result that supports this study's criticism of the Code's chairman independence criteria.

Therefore, the independent chairman is only effective in constraining the earnings-decreasing type of earnings management practice; he or she seems to be ineffective in preventing managers from increasing the reported earnings through earnings management practice. This may be due to the fact that most chairmen are remunerated, in part, by share ownership, although this is supposedly insignificant, and they may not try to constrain managers' behaviour that would benefit them.

The CHAIRCOD result is interesting as one of this study's criticisms of the Code's chairman independence criteria is that it allows the chairman to have share options and a large equity ownership; chairmen who have equity ownership may overlook management attempts to manage earnings upwards, as found in this analysis.

This result is supported by the previous findings of this study related to the signed earnings management relationship with independent directors on the board and nomination committee, none of which show different effects based on the direction of managers' discretion activity. This might be due to NEDS not being rewarded by share ownership because it is prohibited by the Code's NED independence criteria. Thus, this result supports this study's previous recommendation that the Code's NED independence criteria should be applied to chairmen.

Table 6.10 First Model Signed Earnings Management Test								
Negative Earnings Management (Decreasing)					**Positive Earnings Management (Increasing)**			
DAC -	Exp Signe	Coef.	z	P>z	DAC+	Coef.	z	P>z
BRDIND	-	-0.092	-2.350	***	BRDIND	-0.054	-1.630	*
BRDMEET	-	0.002	1.130		BRDMEET	0.001	0.420	
BRDSZE	-	-0.003	-1.660		BRDSZE	-0.003	-1.690	
WOMEN	-	0.026	0.540		WOMEN	-0.079	-1.610	*
REMIND	-	0.004	0.430		REMIND	0.004	0.450	
NOMIND	-	-0.053	-2.690	***	NOMIND	-0.031	-1.650	*
CHAIRCOD	+	0.003	0.370		CHAIRCOD	0.028	2.540	***
CHAIRIND	-	-0.020	-1.640	*	CHAIRIND	-0.006	-0.470	
NEDFEE	-	-0.033	-1.960	**	NEDFEE	-0.030	-1.920	**
NEDMEET	-	-0.006	-0.690		NEDMEET	-0.009	-0.920	
MANGOWN	-	-0.036	-0.760		MANGOWN	-0.036	-0.690	
INSTOWN	-	0.000	1.110		INSTOWN	0.000	1.200	
BLOCK	-	0.006	0.510		BLOCK	0.022	2.650	***
IFRS	?	-0.005	-0.630		IFRS	0.007	0.780	
SIZE	?	0.054	4.880	***	SIZE	0.006	0.450	
LEVG	?	-0.001	-3.520	***	LEVG	0.000	-0.990	
GROWTH	?	0.001	0.090		GROWTH	0.036	1.240	
CFO	?	-0.209	-2.670	***	CFO	-0.122	-1.530	*
ROA	?	0.017	0.260		ROA	0.017	0.280	
_cons		-0.147	-2.720	***	_cons	0.074	0.960	
Adj R-2		17%			R-2	18%		
Wald chi2		69.24***			Wald chi2	68.14***		

Interestingly, the gender diversity (WOMEN) variable shows a negative and significant relationship at the 10% level with positive discretionary accruals. The risk of increasing earnings may exceed the risk of decreasing earnings and, thus, this result may support the argument that women are more risk averse than men. In the UK, corporate governance codes give guidance on board composition and on board directors' duties but they are silent on gender diversity as a corporate governance practice. However, in the USA, the National Association of Corporate Directors Blue Ribbon Commission recommends that gender, race, age, and nationality diversity should be considered in the selection of directors. This result may lend some support to the American regularity gender recommendations.

The NEDs' commitment measures (NEDFEE and NEDMEET) both show the same result as in the original model. However, NEDFEE has a lower significant p-value than the main test result, but there is no difference in the effect of NEDs' fees in either income-increasing or income-decreasing earnings management.

BLOCK shows no significant relationship with negative discretionary accruals. However, it is still positively significant at a 1% level with positive discretionary accruals. This result supports the view that concentrated ownership permits outside blockholders to use accounting information to their own advantage, to require a higher return from firms in their portfolio and to pose a bigger threat of intervention to the firm's management. Therefore, they may increase managers' incentives to conduct income-increasing earnings management, as also documented by Zhong *et al.* (2007).

Among the control variables, SIZE, CFO and LEVG have a significant association with income-decreasing accruals. This result supports claims in prior studies that higher discretionary accruals are associated with larger sized firms, in line with the political costs hypothesis, and with lower leverage firms, in line with the debt covenant hypothesis. The LEVG result is also consistent with that of Becker *et al.* (1998) who find that leverage is negatively associated with the absolute value of discretionary accruals.

However, in the income-increasing accruals model, although all the control variables show the same signs as those shown in the previous models, only CFO shows a statically significant relationship

with the measure of positive discretionary accruals. This may be due to the small sample of 112 firms in the positive discretionary accruals model.

Second Model Signed Earnings Management Test

Table 6.11 reports the GLS estimate of both income-increasing and income-decreasing discretionary accruals on the external auditor and audit committee variables. The adjusted R2 obtained in this model is fairly comparable with that in similar studies, for example those of Frankel *et al.* (2002), Ashbaugh *et al.* (2003) and Dimitropoulos and Asteriou (2010). The constant is negative and highly significant at $p<0.01$.

Regarding the audit committee's characteristics, audit committee independence (AUDIND) has a significant negative effect on the negative discretionary accruals, consistent with the main regression. However, this effect is not significant (though negative with p. value=.15) in reducing the positive discretionary accruals. However, audit committee expertise (AUDEXP) shows a continuous significant negative relation with both directions of earnings management.

Audit committee size (AUDSIZE), consistent with the main model's result, has no effect in either directions of earnings manipulation. However, interestingly, the number of audit committee meetings (AUDMEET), which does not show a significant effect in the main regression for unsigned discretionary accruals, shows a significantly negative relation at 5% level with negative discretionary accruals only. This is consistent with this study's finding that audit committees in general are more effective in constraining downward earnings management.

In the income-decreasing discretionary accruals sample, the coefficient on NAF is positive and significant, suggesting that when a client provides a relatively higher proportion of non-audit fees, the level of negative discretionary accruals increases. Moreover, the coefficient on AF is negative and significant ($\beta=.032$, $z=-2.06$, $p<0.05$). This suggests that when a client pays a relatively higher proportion of audit fees, compared to non-audit fees, the level of negative discretionary accruals decreases.

In the income-increasing discretionary accruals sample, the coefficient on NAF is positive and significant (β=0.029, z=2.18, p<0.05), suggesting that as the NAF generated by a client relative to other clients increases, the level of positive discretionary accruals also increases. Furthermore, the coefficient on AF is negative and significant, suggesting that when the audit fees are a relatively higher proportion of the total fees, the level of positive discretionary accruals decreases. This is in line with some recent evidence (e.g. Dee *et al.*, 2006) that higher proportions of non-audit fees are associated with higher income-increasing accruals, implying a lower quality of earnings.

However, the coefficient on SPEAUD is negative and significant only in the income-increasing discretionary accruals sample and insignificant in the income-decreasing discretionary accruals sample. This suggests that specialised auditors might be more effective in constraining the income-increasing type of earnings management.

It seems that the specialised auditor and audit committee independence complement each other since the former tends to constrain the positive discretionary accruals, while the latter tends to reduce negative discretionary accruals. Unsurprisingly, audit committees behave in the same way as the board of directors in that both are more effective in constraining managers' aggressive downward earnings management and less effective in cases of income-increasing earnings management. Audit committee members have share ownership in their firms and this may affect on their monitoring behavior, this research results show that independent directors are less effective in constraining positive EM. This conclusion offer a modest support to the finding of Archambeault *et al.* (2008) who find a significant positive relation between audit committee members ownership and financial restatement likelihood. They add that Short-term options may reduce oversight quality by causing audit committee members to focus heavily on short-term performance.

This result is in line with findings of Nelson et al. (2003) who use a field-based questionnaire in which 253 auditors from big audit firms recalled and described 515 specific experiences they had with clients who they believe were attempting to manage earnings. They find that when managers manage earnings to increase current-year income, auditors require managers to adjust their attempts. However, when managers manage earnings to decrease current-year income, auditors require managers to adjust their attempts only if they identify them as material or if the attempts are

committed by small clients. Additionally, Becker et al., (1998) find that clients of brand name auditors are associated with income-decreasing discretionary accruals. Also, Chen et al. (2006) find that industry specialist auditors are related to less income increasing earnings management.

6.5.4.3 Parametric (OLS) with Robust Standard Errors and Pooled Regression Tests

This study adopts a non-parametric test based on the nature of the data. Previously, the assumptions of the OLS regression were discussed and GLS regression was deemed to be more suitable for this study. However, interestingly, some research questions the importance of satisfying the three assumptions of OLS tests before employing parametric tests. With reference to the assumptions of normality and homoscedasticity, a number of studies assess the impact of the samples with non-normal distributions and unequal variances on the values of parametric tests. The results suggest that violation of these two assumptions generally has slight effects on the values of these tests. One exception to this finding is where both the size of samples and variances are unequal. However, some researchers argue that this exception take places even with equal sample sizes (Wilcox, 1987). Regarding the third assumption, some research suggests that parametric tests can also be applied with ordinal variables since tests apply to numbers and not to what those numbers refer to (Wilcox, 1987).

Even though it is common to use the non-parametric tests in earnings management studies, some prior studies choose the solution of doing nothing about the problem of not meeting the parametric test assumptions and carry on using this type of test while recognising its limitations (see e.g., Peasnell *et al.*, 2005; Davidson *et al.*, 2005; Abdul Rahman and Ali *et al.*, 2006; Benkel *et al.*, 2006 and Jaggi *et al.*, 2009).

Table 6.11
Second Model Signed Earnings Management Test

Negative Earnings Management (Decreasing)					Positive Earnings Management (Increasing)			
DAC-	Exp Sig	Coef.	z	P>z	DAC+	Coef.	z	P>z
AUDIIND	-	-0.058	-2.160	**	AUDIIND	-0.062	-1.600	
AUDEXP	-	-0.041	-2.760	***	AUDEXP	-0.042	-2.370	***
AUDSIZE	-	0.006	0.730		AUDSIZE	0.006	0.810	
AUDMEET	-	-0.009	-1.890	**	AUDMEET	-0.011	-1.420	
NAF	+	0.031	2.550	***	NAF	0.030	2.180	**
AF	-	-0.032	-2.060	**	AF	-0.031	-1.860	**
SPEAUD	-	-0.018	-0.990		SPEAUD	-0.017	-2.030	**
MANGOWN	?	-0.052	-0.790		MANGOWN	-0.040	-0.620	
IFRS	?	-0.006	-0.440		IFRS	-0.008	-0.670	
SIZE	?	-0.027	-1.800	*	SIZE	-0.023	-1.630	*
LEVG	?	0.000	-0.450		LEVG	0.000	-0.260	
GROWTH	?	-0.016	-1.260		GROWTH	-0.016	-0.780	
CFO	?	-0.143	-1.560	*	CFO	-0.136	-1.250	
ROA	?	0.064	0.810		ROA	0.072	0.950	
_cons		0.368	3.690	***	_cons	0.354	2.690	***
Adj R-2	17%				Adj R-2	12%		
Wald chi2	63.55***				Wald chi2	77.19***		

Another point is that one of the main assumptions for the OLS regression is the homogeneity of variance of the residuals. If the model is well-fitted, there should be no pattern to the residuals plotted against the fitted values. If the variance of the residuals is non-constant then the residual variance is said to be "heteroscedastic.". One common method to correct for heteroscedasticity is the use Robust Standard Errors or as it called in some text books as (Huber/White estimators or sandwich estimators of variance).

Table 6.12 Parametric Test (OLS) Regression

First Model				**Second Model**			
DAC	Coef.	t	P>t	DAC	Coef.	t	P>t
BRDIND	-0.046	-1.660	*	AUDIND	-0.041	-2.680	***
BRDMEET	0.002	1.150		AUDEXP	-0.022	-2.640	***
BRDSZE	-0.003	-1.840	**	AUDSIZE	-0.004	-0.840	
WOMEN	-0.018	-0.490		AUDMEET	-0.002	-0.770	
REMIND	0.009	1.240		NAF1	0.016	2.310	***
NOMIND	-0.045	-2.980	***	AF1	-0.026	-2.710	***
CHAICOD	0.009	1.230		SPEAUD1	-0.019	-1.880	**
CHAIRIND	-0.015	-1.560	*	MANGOWN	-0.008	-0.200	
NEDFEE	-0.032	-2.340	**	IFRS	-0.007	-0.560	
NEDMEET	-0.004	-0.540		SIZE	0.034	3.810	***
INSTOWN	0.000	1.150		LEVG	0.000	1.180	
SIZE	0.040	4.660	***	GROWTH	-0.013	-1.500	***
MANGOWN	-0.030	-0.800		CFO	-0.265	-4.200	***
BLOCK	0.017	2.540	**	ROA	0.100	1.830	**
IFRS	0.011	1.020					
LEVG	-0.001	-3.540	***				
GROWTH	0.003	0.400					
CFO	-0.195	-3.430	***				
ROA	0.002	0.030					
_cons	-0.105	-2.360	***	_cons	-0.078	-1.330	*
Adj R-2	17%			Adj R-2	18%		
F-statistics	41.24***			F-statistics	59.34***		

Robust standard errors address the problem of errors that are not independent and identically distributed. The use of robust standard errors will not change the coefficient estimates provided by OLS, but they will change the standard errors and significance tests. Hence, robust standard errors OLS regression is more trustworthy in the case of heteroscedasticity presence.

In this sensitivity analysis, following Dimitropoulos and Asteriou (2010), a parametric test using Robust Standard Errors OLS with fixed effect is adopted as a robustness check of the main findings. Table 6.12 shows that there are no differences between the main analysis using the non-parametric test and the results of the parametric test for both models. The R square is similar; the results show the same level of significance and the coefficients show the same directions for all variables, except for BRDSIZE, where the significance level drops from 1% to 5%. This result shows that using different relevant statistical techniques, these results show that this study's findings are robust.

Another sensitivity analysis adopted in this study is the pooled test. The main tests apply a panel data test, thus, in order to check the sensitivity of findings a pooled test that assumes that all observations have occurred at the same point of time. This analysis uses a panel of a firm-level, fixed effects specification which is also assumed to address the endogeneity issue Lehn et al. (2004). The rationale for industry fixed effects is that they control for the underlying economic environment that might jointly determine corporate governance structures Lehn et al. (2004). As shown in table 6.13, this study's findings are robust to the pooled data test in both models.

Table 6.13 Pooled Regression with fixed effect						
First Model				**Second Model**		
DAC	Exp Sig	Coef.	P>t	DAC	Coef.	P>t
BRDIND	-	-0.046	*	AUDIIND	-0.039	***
BRDMEET	-	0.001		AUDEXP	-0.019	**
BRDSZE	-	-0.003	**	AUDSIZE	-0.003	
WOMEN	-	-0.022		AUDMEET	-0.001	
REMIND	-	0.009		NAF1	0.019	***
NOMIND	-	-0.043	***	AF1	-0.021	**
CHAIRCOD	+	0.009		SPEAUD1	-0.021	**
CHAIRIND	-	-0.016	*	MANGOWN	-0.013	
NEDFEE	-	-0.035	***	IFRS	-0.010	
NEDMEET	-	-0.005		SIZE	-0.018	**
MANGOWN	-	-0.037		LEVG	0.000	**
INSTOWN	-	0.000		GROWTH	-0.013	
BLOCK	-	0.017	**	CFO	-0.277	***
IFRS	?	-0.001		ROA	0.131	***
SIZE	?	0.041	***			
LEVG	?	-0.001	***			
GROWTH	?	0.002				
CFO	?	-0.203	***			
ROA	?	0.012				
_cons		-0.099	***	_cons	0.220	***
Adj R-2		10%		Adj R-2	13%	
F-statistics		37.34***		F-statistics	91.86***	

6.5.4.4 Endogeneity Test

Although most studies of EM employ single-equation regression models, few recent researches have suggested that a simultaneous equations approach might be more appropriate, since models that containing corporate governance or ownership variables suffer from endogeneity (McMeeking *et al.*, 2006; Larcker and Rusticus, 2008; Coles et al. 2008 and McKnight and Weir, 2009).

This study uses an instrumental variables (IV) two-stage regression (2SLS) approach analysis. It adopts the approach used by Coles *et al*. (2008) and McKnight and Weir (2009) and uses the lagged values of the endogenous variables as instruments. In the analysis, all board composition, NED commitment, audit committee, ownership structures and external audit factors are treated as endogenous.

First, a Hausman test is used to investigate whether there is any endogeneity bias for the independent variables (e.g. Greene, 2003, p. 83). Hausman test show insignificant evidence of an endogeneity bias at the 5% level (w2 ¼ 3.169, (p = 0.17)), which has two important implications. First, similar results should be obtained using either OLS or 2SLS. Second, the lagged independent variables are likely to be valid instrument variables because they pass the Hausman test.

The 2SLS results are shown in table 6.14. The 2SLS results are in agreement with the OLS results reported earlier. Some variables have either more or less significant level but direction and significance remained the same. Thus, endogeneity does not appear to unduly affect this study results.

Table 6.14 Instrumental variables (2SLS) regression							
First Model				**Second Model**			
DAC	Coef.	t	P>t	DAC	Coef.	t	P>t
BRDIND	-0.059	-2.11	**	AUDIND	-0.047	-2.800	***
BRDMEET	0.001	0.6		AUDEXP	-0.023	-2.510	***
BRDSZE	-0.003	-2.11	**	AUDSIZE	-0.003	-0.590	
WOMEN	-0.052	-1.43		AUDMEET	-0.001	-0.430	
REMIND	0.007	0.98		NAF1	0.020	2.550	***
NOMIND	-0.038	-2.53	***	AF1	-0.018	-1.770	*
CHAICOD	0.013	-2.08	**	SPEAUD1	0.047	1.790	*
CHAIRIND	-0.020	1.78	*	MANGOWN	0.004	0.090	
NEDFEE	-0.034	-2.55	***	IFRS	-0.011	-1.400	
NEDMEET	-0.003	-0.43		SIZE	-0.027	-2.850	***
INSTOWN	0.000	1.13		LEVG	0.000	0.440	
SIZE	0.047	5.41	***	GROWTH	-0.011	-1.150	***
MANGOWN	-0.052	-1.34		CFO	-0.292	-4.310	***
BLOCK	0.017	2.53	***	ROA	0.149	2.580	***
IFRS	0.011	1.020					
LEVG	-0.001	-4.05	***				
GROWTH	0.002	0.2					
CFO	-0.233	-4.12	***				
ROA	0.034	0.72					
_cons	-0.105	-2.360	***	_cons	0.279	4.500	***
AdjR-2	12%			AdjR-2	6%		
F-statistics	31.65***			F-statistics	24.83***		

6.5.4.5 Audit Committee and Board of Directors Cut-Off Measures

Following prior research, such as that of Davidson *et al.* (2005), this study also examines the sensitivity of audit committee variables to specific cut-offs. Davidson *et al.* (2005) and Klein (2002a) do not find any association between the level of discretionary accruals and the fully independent audit committee. However, Bédard *et al.* (2004) document a negative relation between

a fully independent audit committee and discretionary accruals. In addition, Bronson *et al.* (2009) suggest that wholly independent audit committees are significantly positively associated with the likelihood that an audit firm issues a going-concern opinion to a financially distressed client and is negatively associated with the likelihood of auditor dismissal following the delivery of a going-concern opinion. Their findings provide support for the SOX requirement of 100% independent audit committees and for those opposed to easing the SOX requirements for smaller and foreign companies

Following the recommendation of the UK Corporate Governance Combined Code (2003), this study measures the audit committee variables using cut-off basis. First, AUDIND is substituted by FULAUD with a dummy variable taking the value of 1 if the audit committee is comprised entirely of independent directors and 0 otherwise. AUDEXP continues to be measured as a dummy variable that takes the value of 1 if the audit committee has at least one financial expert and 0 otherwise. AUDSIZE is also substituted with a dummy variable AUDSIZE3 that takes the value of 1 if the audit committee is comprised of three or more members and 0 otherwise. This study also applies a similar dummy variable to AUDMEET and replaces it with AUDMEET3 that takes a value of 1 if the audit committee meets at least three times a year, and 0 otherwise. Then the analysis with these three cut-off variables is repeated. The coefficients are consistent with the original model and are insensitive to this test.

These test results do not provide support for two of the UK corporate governance recommendations of the Combined Code (2003). First, the recommendation of Smith's guidance is that "There should be no fewer than three meetings during the year for the audit committee" is not supported. The number of meetings should be left to the committee to decide based on the need for such meetings. Secondly, the recommendation that firms should establish an audit committee that consists of at least three independent members is also not supported. The audit committee size result shows that audit committees with three or more members are not more effective than audit committees with less than three members.

The result of the cut-off measures in table 6.15 shows that fully independent audit committees are significantly and negatively related to earnings management. However, the significance of this

variable is at the 10% level compared to the 1% level in the main test. This finding is similar to the recent conclusion of Bronson *et al.* (2009) who test Section 301 of the Sarbanes-Oxley Act of 2002 (SOX), which requires all listed companies to maintain an audit committee that is 100% independent. They examine whether a completely independent audit committee is necessary to obtain the expected monitoring benefits and their results provide support for the SOX requirement. The result is also similar to the findings of Bédard *et al.* (2004) who document a negative relation between fully independent audit committees and discretionary accruals, though their result does not hold good for firms with audit committees composed of over 50% but less than 100% independent directors.

Collectively, in terms of the effect of fully independent audit committees, this study's result is similar to most previous US findings such as those of Bédard *et al.* (2004) and Bronson *et al.* (2009), but it contrasts with the finding of Davidson *et al.* (2005) using Australian data.

Moreover, this study tests whether the 'magic' number of 50% of the board members being independent non-executive directors has a significant influence on earnings management. According to the UK Corporate Governance Code (2003, p.13) "Except for smaller companies, at least half the board, excluding the chairman, should comprise non-executive directors determined by the board to be independent".

Thus, a dummy variable to represent firms with 50% or more independent non-executive directors is introduced and the first model is retested. In table 6.15, the result shows a significant negative relationship between the dummy variable and earnings management. This suggests that a majority of independent non-executive directors on the board is effective in achieving board independence.

Furthermore, this study conducts a sensitivity analysis for its non-findings related to the effect of an independent remuneration committee. In the main test, a dummy variable taking the value of one if the remuneration committee is fully independent, and zero otherwise, is used to measure this effect. However, using a continuous variable may allow for a larger scope to capture the effect of such an important committee and thus, the result may have been different.

Table 6.15 Board of Directors and Audit Committee Cut-Off Measures											
Alternative Board Independence and Remuneration Independence Measures								**Alternative Audit Committee Measures**			
First Model								**Second Model**			
(BRDIND) Alternative Measure				**(REMIND) Alternative Measure**				**(AUDMEET), (AUDIND) and (AUDSIZE) Alternative Measures**			
DAC	Coef.	z	P>z	DAC	Coef.	z	P>z	DAC	Coef.	z	P>z
BRDIND2	-0.017	-2.280	**	BRDIND	-0.049	-1.660	*	***FAUDIND***	-0.011	-1.750	*
BRDMEET	0.001	1.130		BRDMEET	0.001	0.990		***AUDEXP***	-0.024	-2.820	***
BRDSZE	-0.003	-1.570	*	BRDSZE	-0.003	-1.940	**	***AUDMEET3***	0.016	1.550	
NOMIND	-0.048	-3.320	***	NOMIND	-0.044	-2.900	***	***AUDSIZE3***	0.002	0.300	
REMIND	0.008	1.130		***REMIND2***	0.006	0.390		NAF1	0.014	1.980	**
WOMEN	-0.023	-0.620		WOMEN	-0.019	-0.530		AF1	-0.030	-3.260	***
CHAIRCOD	0.006	0.800		CHAIRCOD	0.008	1.160		SPEAUD1	-0.020	-1.950	**
CHAIRND	-0.014	-1.410	*	CHAIRND	-0.016	-1.630	*	MANGOWN	-0.009	-0.200	
NEDFEE	-0.035	-2.530	***	NEDFEE	-0.035	-2.530	***	IFRS	-0.009	-1.250	
NEDMEET	-0.006	-0.900		NEDMEET	-0.005	-0.740		SIZE	0.034	3.830	***
MANGOWN	-0.033	-0.880		MANGOWN	-0.038	-0.990		LEVG	0.000	1.290	
BLOCK	0.018	2.660	***	BLOCK	0.018	2.680	***	GROWTH	-0.012	-1.420	
INSTOWN	0.000	1.080		INSTOWN	0.000	1.030		CFO	-0.272	-4.310	***
IFRS	-0.002	-0.300		IFRS	-0.001	-0.140		ROA	0.103	1.900	**
SIZE	0.036	4.490	***	SIZE	0.041	4.810	***				
LEVG	-0.001	-3.680	***	LEVG	-0.001	-3.610	***				
GROWTH	0.002	0.200		GROWTH	0.002	0.230					
CFO	-0.200	-3.540	***	CFO	-0.202	-3.550	***				
ROA	0.019	0.400		ROA	0.009	0.190					
_cons	-0.087	-1.990	**	_cons	-0.097	-2.190	**	_cons	-0.133	-2.480	***
AdjR-2	15%			AdjR-2	16%			AdjR-2	17%		
Wald-Chi	74.02***			Wald-Chi	60.58***			Wald-Chi	61.44***		

Prior research such as that of Davidson *et al.* (2005) and Klein (2002a) does not find any association between the level of discretionary accruals and a fully independent audit committee. However, they document a significant relationship between the level of discretionary accruals and cases of a majority of independent directors on the committee. Following prior research, such as that of Davidson *et al.* (2005), this study also examines the sensitivity of the remuneration committee findings to a different measure. Therefore, as an additional analysis, this study constructs a continuous variable that represents the percentage of the independent directors on the remuneration committee. The mean of this variable is 0.89 and when the variable is retested, an insignificant result is revealed, supporting the main findings of this research. The result, shown in table 6.15, enhances the finding of this study that remuneration committees are not very effective in discharging their duties.

6.5.4.6 Auditor Switch

Auditor switches (or opinion shopping) usually signal the high possibility of earnings management and lower-quality of auditing (Becker et al., 1998; Nelson et al., 2002). Nevertheless, empirical results of whether firms can achieve ‘‘opinion shopping’’ through an auditor switch are mixed (Craswell, 1988; Krishnan, 2003; Schauer, 2008). It is argued that there are differences in industrial knowledge and auditing resources for incumbent auditors and their successors. Hence, management may be able to manipulate accounting numbers when switching between auditors (Nelson et al., 2002; Kim and Kross, 2005). Additionally, the measures of NAF for these firms that changes auditor are based on audit and non audit fees paid to different auditors. Therefore, switching auditors will negatively affect audit quality and, consequently, decrease the credibility of financial statements.

This study re-examines the relationship between earnings management and external audit factors while controlling for auditor switch and find whether the results are affected by this essential factor. As in prior studies, this research tests the extent of earnings management following auditor changes. Managers may change auditors to enable them to engage in opportunistic behaviour by exploiting the unfamiliarity of the new auditor with the firm's business. Prior research indicates that changing auditors indicates a lower quality audit and a greater likelihood of earnings management.

Only 36 cases of auditor switch are identified in this study's sample firms for the period from 2003 to 2006. The findings, shown in table 6.16, do not support the notion that auditor changes, on average, affect the earnings quality while other results show the same direction and significance as the main model results. This result supports those of DeFond and Subramanyam (1998), Ferguson *et al.* (2004) and Davidson *et al.* (2006), who also find no evidence of pervasive income-increasing earnings management and auditor changes in their sample firms.

Table 6.16
Test of The Effect of Auditor Switch

DAC	Coef.	z	P>z
AUDIIND	-0.039	-2.570	***
AUDEXP	-0.022	-2.580	***
AUDSIZE	-0.003	-0.770	
AUDMEET	-0.002	-0.770	
NAF1	0.017	2.420	***
AF1	-0.029	-3.110	***
SPEAUD1	-0.020	-1.940	**
AUDSWT	-0.021	-1.030	
MANGOWN	-0.011	-0.260	
IFRS	-0.008	-1.040	
SIZE	0.033	3.750	***
LEVG	0.000	1.240	
GROWTH	-0.013	-1.510	
CFO	-0.271	-4.300	***
ROA	0.110	2.030	**
_cons	-0.077	-1.330	
AdjR-2	18%		
Wald-Chi	69.77***		

6.5.4.7 The Aggregated Audit Committee Score

Corporate governance has multiple dimensions and each function may substitute for or complement others within a given dimension to form an optimal governance structure. Some recent researches have investigated the effect of corporate governance, especially the audit committee, in score format rather than for individual variables. Jiang *et al.* (2008) examine the relation between corporate governance and earnings management using a Gov-Score developed by Brown & Caylor (2006) that includes size and composition of board of directors, composition of audit committee, and extent of institutional ownership. In the post-Sarbanes–Oxley period, they find higher levels of corporate governance are associated with lower earnings management.

Dey (2005) applies a comprehensive set of individual governance variables to measure different corporate governance dimensions. Her results show that the composition and functioning of certain corporate governance attributes are significantly related to the reporting credibility of firms that have high agency costs. Similarly, Jenkins (2002) uses four components to measure audit committee effectiveness and finds a negative relationship between discretionary accruals and audit committee effectiveness. Additionally, Lei (2007) measures audit committee effectiveness with a composite proxy based on the three characteristics of audit committee size, meeting frequency and the proportion of accounting experts.

Similar to Brown and Caylor (2006), this study creates a governance score (AUDSCORE). Brown and Caylor (2006) code fifty-one governance variables as either zero or one depending on whether the firm's governance standards are minimally acceptable. Therefore, this study constructs an index for each firm by assigning one point for each governance standard that is satisfied by meeting the minimum standard recommended by the UK Corporate Governance Code (2003).

The aim of this test is to investigate whether the audit committee variables function better collectively or individually. Therefore, this study uses an aggregated audit committee score consisting of four governance variables as an indicator of a firm's overall audit committee effectiveness. These four variables are a fully independent audit committee with at least three members, one of whom is a financial expert that meets at least three times a year. If these four audit

committee variables together serve as a signal of an effective audit committee and strong corporate governance, investors might usefully perceive that a higher aggregated audit committee score is likely to relate to less earnings management.

Thus a dummy variable is introduced that takes the value of one if the audit committee meets all four conditions, and zero otherwise. All previous audit committee variables tested in the main model are excluded to avoid the multicolliniarity problem, and then the analysis is repeated. The results are illustrated in table 6.17 and show that AUDSCORE has a negative significant relationship (coefficient -0.014 and $p<0.01$) with discretionary accruals.

This result shows that audit committees are better when they exhibit all effectiveness characteristics simultaneously. This implies that audit committees that are composed of at least three members, all of them independent and including at least one financial expert, and which meet at least three times a year, do constrain earnings management better than audit committees that do not exhibit all four variables, and that this is a more powerful measure of effectiveness than any of the individual variables. This result also implies that the findings of the second model are robust.

Table 6.17
The Aggregated Audit Committee Score Test

DAC2	Coef.	z	P>z
AUDSCOR	-0.014	-3.440	***
NAF1	0.017	2.480	***
AF1	-0.028	-3.120	***
SPEAUD1	-0.019	-1.900	**
MANGOWN	-0.007	-0.180	
IFRS	-0.010	-1.360	
SIZE	0.033	3.840	***
LEVG	0.000	1.210	
GROWTH	-0.013	-1.460	
CFO	-0.267	-4.240	***
ROA	0.103	1.900	**
_cons	-0.112	-2.130	***
AdjR-2	19%		
Wald-Chi	50.39***		

6.5.4.8 Cross-Listing

There are some differences between the U.K. and the U.S. in terms of corporate governance regimes, accounting standards and legislation. In response to a wave of financial scandals in the U.S., the Sarbanes–Oxley Act (SOX) attempted to restore investors' confidence by promulgating disclosure of a variety of accounting-related corporate governance mechanisms.

Leuz (2006) and Li, *et al.* (2008) argue that government-enforced regulations can produce better disclosures that enable firms and investors to make decisions. Similar to this argument, Cohen *et al.* (2008) find that earnings management behaviour declined significantly after the passage of SOX. Chang and Sun (2009) also find a significantly negative association between earnings management and independent audit committees after the passage of SOX but no significant findings for these associations prior to SOX. These findings indicate the SOX provisions are effective in reducing earnings management and affect the relationship between earnings management and corporate governance in cross-listed foreign firms.

Consequently, in the US, all cross-listed foreign firms are now required to meet the same SEC requirements as US firms, including the SOX requirements. This could pressure UK cross-listed firms to apply both the UK and the US strict requirements, thus, producing different (presumably better) financial outcomes than their counterparts that are listed only in the UK market and that apply only the UK regulations. Maijoor and Vanstraelen (2006) argue that the US capital markets and the SEC are reputed to have the most restrictive regulations regarding the quality of financial reporting but they find no evidence to support that argument.

Thus, it is expected that cross-listed firms manage earning less, which may be due to the pressure of the various listing, accounting and corporate governance requirements of the different stock markets. Therefore, this study tests, as an additional control variable, the effect of cross-listing on the management practice of earnings management. A dummy variable is introduced that takes the value of 1 if the company is cross-listed in a foreign capital market, and zero otherwise. The data is gathered from DataStream. About 73% of this study's sample firms are cross-listed outside the UK, and over 90% of them are cross-listed in one or more of the US capital markets.

After including this variable and rerunning the regression test for both models, as evidenced in table 6.18, it is found that a cross-listing status neither affects the magnitude of earnings management, nor changes the previously documented findings of this study. This result is consistent with that of Maijoor and Vanstraelen (2006) who use data for UK, Germany and France between 1992 and 2000. This result does not support the argument of Cohen, Dey and Lys (2008) and Chang and Sun (2009) that government-enforced regulations can produce better disclosures and reduce earnings management practice.

However, cross-listing in the second model shows a negative relationship with earnings management at a 10% level, which may suggest that cross-listed firms manage earnings less as they are subject to greater corporate governance and disclosure requirements. This result supports the findings of Chang and Sun (2009) who reveal a negative association between earnings management and audit-committee independence after SOX, an association that is not found in the pre-SOX period.

6.5.4.9 Controlling for "Big Bath" Effect

Following prior research, such as that of Frankel *et al.* (2002) and Srinidhi and Gul (2007), this study includes a dummy variable (LOSS) that takes the value of one if the firm has reported a loss in the period, and zero otherwise, to control for "big bath" type charges that could indicate poor accrual quality. Studies (e.g. Healy, 1985) also argue that firms tend to use “big bath” when they realise that they may not be able to manage earnings to meet targets. This variable is also used by some other research to control for managers’ incentive to avoid earnings decreases and losses Chen and Zhou (2007). After replicating the analysis with this indicator variable, the results proved to be robust, as shown in table 6.18.

6.5.4.10 Analysis of Size Effects

A potential issue concerning the relation between earnings management, on the one hand, and corporate governance and audit and non-audit fee magnitudes, on the other, is whether EM and corporate governance reflect the firm size and whether the fee magnitudes reflect the client firm’s size more than they reflect economic bonding.

To address this concern, this study follows Krishnan and Parsons (2008) and reconstitutes observations in the two groups to minimise differences in firm size. Models one and two were re-estimated after excluding very small firms and very large firms. Benkel *et al.* (2006) find support for the hypothesis that higher board and audit committee independence are associated with reduced levels of earnings management in large firms but not in small firms.

Some previous studies (e.g. Siregar and Utama, 2008) use cut-off percentages, while others (e.g. Davidson *et al.*, 2005) use capital market classifications. In checking robustness, this study follows Davidson *et al.* (2005), who exclude firms not in the Top 500 ASX listed firms by market capitalisation, and it excludes large firms that belong only to the FTSE 100 Index and small firms that belong only to the FTSE 350 Index, before rerunning the test using medium firms that belong only to the FTSE 250 Index. This process produces a sample of 294 firm-year observations. The results in table 6.19 show no significant differences with the main regression results. Some attributes, such as SPEAUD1, AF1 and BRDIND, have a stronger relation with earnings management than they do in the main test. The control variable ROA becomes significantly related to earnings management at the 10% level. This result is expected as the variation in ROA may have decreased as the sample becomes more homogenous.

Table 6.18 Test of Cross-Listing and Big Bath Effects

First Model							Second Model						
	Cross-Listing Test			Big Bath Test				Cross-Listing Test			Big Bath Test		
DAC	Coef.	z	P>z	Coef.	z	P>z	DAC	Coef.	z	P>z	Coef.	z	P>z
BRDIND	-0.047	-1.710	*	-0.046	-1.680	*	AUDIIND	-0.038	-2.480	***	-0.041	-2.660	***
BRDMEET	0.001	0.990		0.001	1.030		AUDEXP	-0.021	-2.510	***	-0.022	-2.590	***
BRDSZE	-0.003	-1.940	**	-0.003	-1.940	**	AUDSIZE	-0.002	-0.530		-0.003	-0.730	
WOMEN	-0.023	-0.650		-0.022	-0.600		AUDMEET	-0.002	-0.810		-0.002	-0.780	
REMIND	0.009	1.240		0.008	1.140		NAF1	0.019	2.730	***	0.017	2.410	***
NOMIND	-0.043	-2.840	**	-0.043	-2.840	***	AF1	-0.026	-2.850	***	-0.028	-3.020	***
CHAIRCOD	0.009	1.240		0.009	1.230		SPEAUD1	-0.018	-1.790	*	-0.019	-1.870	**
CHAIRND	-0.016	-1.680	*	-0.016	-1.650	*	MANGOWN	-0.021	-0.490		-0.011	-0.270	
NEDFEE	-0.035	-2.550	***	-0.036	-2.570	*	IFRS	-0.008	-1.070		-0.007	-1.010	
NEDMEET	-0.005	-0.730		-0.005	-0.740		SIZE	0.036	4.050	***	0.033	3.720	***
MANGOWN	-0.038	-0.990		-0.038	-0.990		LEVG	0.000	1.340		0.000	1.220	
INSTOWN	0.000	1.090		0.000	1.070		GROWTH	-0.014	-1.570		-0.013	-1.480	
BLOCK	0.017	2.530	***	0.017	2.580	*	CFO	-0.258	-4.110	***	-0.263	-4.180	***
IFRS	-0.001	-0.190		-0.002	-0.230		ROA	0.108	2.000	**	0.087	1.520	*
SIZE	0.041	4.830	***	0.041	4.830	***							
LEVG	-0.001	-3.700	***	-0.001	-3.690	***							
GROWTH	0.002	0.230		0.002	0.260								
CFO	-0.204	-3.600	***	-0.203	-3.580	***							
ROA	0.010	0.210		0.011	0.220								
CROSSLIST	-0.005	-0.620					***CROSSLIST***	-0.017	-1.750	*			
LOSS				-0.007	-0.590		***LOSS***				0.011	0.730	
_cons	-0.096	-2.160	**	-0.099	-2.230	**	_cons	-0.083	-1.440		-0.080	-1.370	
AdjR-2	17%			19%			AdjR-2	18%			21%		
Wald-Chi	71.2***			67.45***			Wald-Chi	59.12***			44.12***		

Table 6.19 Analysis of Size Effects (Medium Sized Firms)							
First Model				**Second Model**			
DAC	Coef.	z	P>z	DAC	Coef.	z	P>z
BRDIND	-0.065	-2.340	**	AUDIIND	-0.045	-2.740	***
BRDMEET	0.002	1.310		AUDEXP	-0.022	-2.460	***
BRDSZE	-0.003	-1.970	**	AUDSIZE	-0.008	-1.560	
WOMEN	-0.042	-1.180		AUDMEET	-0.002	-0.570	
REMIND	0.009	1.270		NAF1	0.023	2.600	***
NOMIND	-0.043	-2.890	***	AF1	-0.031	-2.650	***
CHAIRCOD	0.005	0.760		SPEAUD1	-0.022	-2.010	***
CHAIRIND	-0.016	-1.660	*	MANGOWN	-0.020	-0.440	
NEDFEE	-0.027	-1.880	**	IFRS	-0.013	-1.670	
NEDMEET	0.003	0.500		SIZE	-0.009	-0.840	
INSTOWN	0.000	0.470		LEVG	0.000	1.520	
SIZE	0.025	2.700	***	GROWTH	-0.027	-2.500	***
MANGOWN	-0.039	-1.000		CFO	-0.224	-3.290	***
BLOCK	0.013	1.930	**	ROA	0.102	1.740	*
IFRS	0.009	0.850					
LEVG	0.000	-2.660	***				
GROWTH	-0.002	-0.280					
CFO	-0.107	-1.870	**				
ROA	0.080	1.640	*				
_cons	0.004	0.080		_cons	0.206	2.930	***
AdjR-2	11%			AdjR-2	15%		
Wald-Chi	86.33***			Wald-Chi	73.49***		

6.5.4.11 Industry Analysis

The relation between earnings management, on one side, and corporate governance and the external auditor, on the other side, could also be driven by the type of industry in which the company operates. Recent research suggests that discretionary accruals estimated cross-sectionally can be noisy and biased towards the resulting tests if the firms in the sample are not homogeneous (Dopuch *et al.*, 2005) as cited in Gul *et al.* (2009). Industry analysis is carried out in order to investigate this potential issue of whether this study's results would change based on the industry type. The demand

for, and supply of, non-audit services, as well as the effect of the specialised auditor, can differ by industry (Craswell *et al.*, 1995).

Following prior studies by Frankel *et al.* (2002) and Srinidhi and Gul, (2007), this study conducts an industry-wise analysis of the effect of economic bonding variables on earnings management for each of the six largest industries in our sample which represent more than 60% of the firms in the sample, namely, Restaurants, Pubs & Breweries (RPB), Construction & Building Materials (CBM), Media & Photography (MP), Leisure, Entertainment & Hotels (LEH), General Retailers (GR) and Support Services (SS). Consistent with Carcello *et al.* (2002) and Abbott *et al.* (2006), this study includes an industry dummy variable for each one of these industries. Dummy variables take the value of one if the firm belongs to that particular industry, and zero otherwise. In table 6.20 and table 6.21, the dummy variables are named by their shortened forms shown above.

The results, shown in table 6.20 and table 6.21, reveal that, except for CBM in the second model, which is positively and significantly related to earnings management at the 5% level, there are only insignificant coefficients with earnings management. The CBM result may differ because it is a highly complex industry that may have more motives and scope than others to manage earnings. It includes firms with complex contracting and revenue recognition issues as well as difficulties in applying corporate governance recommendations, which may make it difficult for external auditors to detect earnings management. This result supports the findings of Beasley *et al*. (2000) that the nature of fraud differs by industry and that certain industries have more particular types of fraud than other industries.

The results for the other five industries show no effect on the directions or the significance of the coefficients for both corporate governance and ownership variables in the first model and for audit committee and external audit variables in the second model. These results show that this study's results are not driven by the type of industry.

Table 6.20 The First Model Industry Analyses

DAC	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z
BRDIND	-0.048	-1.730	*	-0.045	-1.640	*	-0.048	-1.720	*	-0.046	-1.670	*	-0.045	-1.620	*	-0.046	-1.680	*
BRDMEET	0.001	0.990		0.001	1.020		0.001	1.040		0.001	1.010		0.001	0.990		0.001	1.010	
BRDSZE	-0.003	-1.950	*	-0.003	-1.910	**	-0.003	-1.970	**	-0.003	-1.920	**	-0.003	-1.930	**	-0.003	-1.920	**
WOMEN	-0.021	-0.580		-0.021	-0.590		-0.020	-0.540		-0.022	-0.620		-0.024	-0.660		-0.023	-0.630	
REMIND	0.009	1.190		0.009	1.250		0.009	1.170		0.009	1.230		0.009	1.230		0.009	1.220	
NOMIND	-0.041	-2.750	***	-0.043	-2.880	***	-0.043	-2.870	***	-0.043	-2.860	***	-0.043	-2.870	***	-0.043	-2.860	***
CHAIRCOD	0.009	1.250		0.009	1.200		0.008	1.180		0.009	1.230		0.009	1.220		0.009	1.230	
CHAIRND	-0.016	-1.690	*	-0.016	-1.680	*	-0.016	-1.650	*	-0.016	-1.670	*	-0.016	-1.690	*	-0.016	-1.670	*
NEDFEE	-0.036	-2.590	***	-0.035	-2.540	***	-0.035	-2.540	*	-0.035	-2.510	***	-0.034	-2.450	***	-0.035	-2.530	***
NEDMEET	-0.005	-0.790		-0.005	-0.730		-0.005	-0.760		-0.005	-0.740		-0.005	-0.680		-0.005	-0.750	
MANGOWN	-0.035	-0.930		-0.037	-0.970		0.000	1.100		0.000	1.090		0.000	1.110		0.000	1.090	
INSTOWN	0.000	1.080		0.000	1.090		-0.037	-0.980		-0.037	-0.970		-0.036	-0.960		-0.037	-0.970	
BLOCK	0.016	2.450	***	0.017	2.580	***	0.017	2.560	*	0.017	2.550	*	0.017	2.590	***	0.017	2.560	***
IFRS	-0.001	-0.190		-0.001	-0.200		-0.001	-0.200		-0.001	-0.200		-0.002	-0.240		-0.001	-0.200	
SIZE	0.042	4.870	***	0.041	4.780	***	0.042	4.850	***	0.041	4.800	***	0.041	4.770	***	0.041	4.810	***
LEVG	-0.001	-3.610	***	-0.001	-3.630	***	-0.001	-3.700	***	-0.001	-3.690	***	-0.001	-3.720	***	-0.001	-3.690	***
GROWTH	0.002	0.200		0.002	0.220		0.002	0.210		0.002	0.230		0.002	0.260		0.002	0.230	
CFO	-0.204	-3.590	***	-0.201	-3.540	***	-0.206	-3.620	***	-0.203	-3.580	***	-0.201	-3.530	***	-0.203	-3.590	***
ROA	0.011	0.230		0.011	0.220		0.011	0.240		0.012	0.250		0.011	0.230		0.011	0.240	
LEH	-0.018	-1.000																
RPB				-0.008	-0.710													
MP							-0.009	-0.660										
SS										0.000	-0.020							
CBM													0.006	0.740				
GR																0.001	0.150	
_cons	-0.101	-2.280	**	-0.097	-2.200	**	-0.102	-2.290	**	-0.099	-2.240	**	-0.099	-2.250	**	-0.099	-2.240	**
AdjR-2	12%			13%			12%			12%			13%			13%		
Wald-Chi	81.33***			79.44***			80.26***			81.14***			78.16***			79.54***		

Table 6.21 The Second Model Industry Analyses

DAC	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z	Coef.	z	P>z
NAF1	0.02	2.40	***	0.02	2.51	***	0.02	2.44	***	0.02	2.47	***	0.02	2.47	***	0.02	2.32	**
AF1	-0.03	-2.99	***	-0.03	-2.96	***	-0.03	-2.98	***	-0.03	-2.97	***	-0.03	-2.90	***	-0.03	-2.94	***
SPEAUD1	-0.02	-1.87	**	-0.02	-1.82	*	-0.02	-1.86	**	-0.02	-1.77	*	-0.02	-1.89	**	-0.02	-1.95	**
AUDSIZE	0.00	-0.74		0.00	-0.62		0.00	-0.74		0.00	-0.74		0.00	-0.83		0.00	-1.02	
AUDMEET	0.00	-0.74		0.00	-0.85		0.00	-0.77		0.00	-0.84		0.00	-0.74		0.00	-0.60	
AUDIIND	-0.04	-2.60	***	-0.04	-2.63	***	-0.04	-2.65	***	-0.04	-2.66	***	-0.04	-2.66	***	-0.04	-2.77	***
AUDEXP	-0.02	-2.60	***	-0.02	-2.64	***	-0.02	-2.62	***	-0.02	-2.64	***	-0.02	-2.63	***	-0.02	-2.69	***
MNGOWN	-0.01	-0.28		-0.01	-0.20		-0.01	-0.26		-0.01	-0.19		-0.01	-0.26		-0.01	-0.24	
IFRS	-0.01	-1.03		-0.01	-1.07		-0.01	-1.03		-0.01	-1.04		-0.01	-1.03		-0.01	-0.98	
SIZE	0.03	3.85	***	0.03	3.88	***	0.03	3.86	***	0.03	3.88	***	0.03	3.88	***	0.03	3.76	***
LEVG	0.00	1.22		0.00	1.09		0.00	1.11		0.00	1.13		0.00	1.04		0.00	1.35	
GROWTH	-0.01	-1.52		-0.01	-1.54		-0.01	-1.53		-0.01	-1.54		-0.01	-1.55		-0.01	-1.43	
CFO	-0.27	-4.22	***	-0.27	-4.22	***	-0.26	-4.17	***	-0.26	-4.17	***	-0.26	-4.11	***	-0.26	-4.18	***
ROA	0.10	1.87	**	0.10	1.84	*	0.10	1.88	**	0.10	1.88	***	0.10	1.79	***	0.09	1.67	*
MP	0.00	0.30																
GR				-0.01	-0.74													
SS							0.00	0.15										
LEH										-0.01	-0.68							
RPB													-0.01	-0.90				
CBM																0.04	1.99	**
_cons	-0.08	-1.43		-0.08	-1.42		-0.08	-1.41		-0.08	-1.40		-0.08	-1.37		-0.08	-1.30	
AdjR-2	15%			16%			16%			16%			15%			16%		
Wald-Chi	68.33***			66.14***			65.98***			65.47***			67.98***			65.78***		

6.5.4.12 Change in Fees

Cahan *et al.* (2008) argue that significant growth in non-audit fees creates an economic bond between the auditor and the client such that the auditors do not test managers' reporting decisions. This study examines changes in fees, and growth in audit and non-audit fees, between 2003 and 2004, 2004 and 2005, and 2005 and 2006. Following Cahan *et al.* (2008), this study repeats the regression analysis using alternative variables for both non-audit and audit fees magnitudes. Two alternative variables are used, the change in non-audit fees from last year to the current year (CHNAF), and the change in audit fees from last year to the current year (CHAF).

The results of these alternative variables, shown in table 6.22, are consistent with the continuous variable results in the main regression. The growth in both fee variables is found to be significant and the sign of the coefficients are as expected.

Table 6.22
Test of the Auditor Fees Changes

DAC	Coef.	z	P>z
CHNAF	0.078	3.620	***
CHAF	0.061	2.910	***
SPEAUD1	-0.011	-1.060	
AUDSIZE	-0.002	-0.450	
AUDMEET	0.002	0.750	
AUDIIND	-0.037	-2.380	***
AUDEXP	-0.017	-1.960	**
MANGOWN	0.034	0.870	
IFRS	0.006	0.770	
SIZE	0.050	5.610	***
LEVG	0.000	1.650	*
GROWTH	-0.003	-0.340	
CFO	-0.263	-3.700	***
ROA	0.088	1.370	
_cons	-0.226	-3.790	***
AdjR-2	17%		
Wald-Chi	63.59***		

6.5.4.13 Growth

GROWTH is the only variable that produces inconclusive results in both univariate tests in both models; when using t-test it shows a significant positive difference but the significance disappears in the non-parametric test. This may be due to GROWTH being highly skewed, which makes the t-test results unreliable and incomparable to the Mann Whitney tests. However, in the multivariate tests for both models, GROWTH revealed consistent results.

This biasing may result from the time frame of this study. Certain industries, but not all, may have experienced a particularly high period of growth during this period. This may have caused data skew and inconsistent results. However, due to the contradictory nature of the results, it was deemed appropriate to conduct a sensitivity analysis that excludes this variable from the main regressions in both models. The results, presented in table 6.23, show that all variables reveal the same results, which suggests that this study's results are insensitive to the elimination of the GROWTH variable.

6.5.4.14 Non-Linear Effect of Institutional and Blockholders Ownership on Earnings Management

The majority of evidence in the previous literature shows that institutional ownership has a negative effect on earnings management, such as Rajgopal and Venkatachalam (1998), Bushee (2001), Yu (2008) and Charitou *et al.* (2007) use US data; Koh (2003) and Koh and Hsu (2005) use Australian data; Park and Shin (2004) use Canadian firms; and Osma and Noguer (2007) use Spanish data.

However, this study's result shows no significant relationship between institutional ownership and earnings management, and this is consistent with UK evidence by Peasnall *et al.* (2000) and Peasnall *et al.* (2005) that no association exists between accruals and institutional investors. As discussed earlier in this chapter, a possible reason for the different result is the use of different measures of both institutional ownership and earnings management.

Table 6.23
Main Regressions without GROWTH Variable

First Model				Second Model			
DAC	Coef.	z	P>z	DAC	Coef.	z	P>z
BRDIND	-0.043	-1.570	*	AUDIIND	-0.040	-2.520	***
BRDMEET	0.001	0.930		AUDEXP	-0.020	-2.340	***
BRDSZE	-0.003	-1.570	*	AUDSIZE	-0.004	-0.990	
WOMEN	-0.018	-0.510		AUDMEET	-0.001	-0.260	
NOMIND	-0.039	-2.610	***	NAF1	0.020	2.680	***
REMIND	0.007	0.980		AF1	-0.019	-1.980	**
CHAIRND	-0.016	-1.620	*	SPEAUD1	-0.019	-1.790	*
CHAIRCOD	0.009	1.200		MANGOWN	-0.006	-0.150	
NEDFEE	-0.034	-2.470	***	IFRS	-0.010	-1.400	
NEDMEET	-0.005	-0.710		SIZE	-0.023	-2.700	***
MANGOWN	-0.037	-0.960		LEVG	0.000	1.920	**
INSTOWN	0.000	1.090		CFO	-0.300	-4.710	***
BLOCK	0.016	2.390	***	ROA	0.142	2.590	*
IFRS	-0.001	-0.120		_cons	0.255	4.650	*
SIZE	0.037	4.410	***				
LEVG	-0.001	-3.810	***				
CFO	-0.180	-3.210	***				
ROA	0.018	0.380					
_cons	-0.078	-1.790	*				
AdjR-2	14%			R-2	16%		
Wald-Chi	79.45***			Wald-Chi	66.31***		

Nevertheless, in this robustness check, the test assumes the co-existence of transient and long-term oriented institutional investors, implying a non-linear association between institutional ownership and earnings management. Besides the simple linear relation between institutional ownership and earnings management, as predicted by the prior literature (Rajgopal and Venkatachalam, 1998) and adopted in the main tests, this study examines the non-linear relationship between institutional ownership and earnings management to investigate whether a U-shaped relationship exists, as some prior studies argue.

Following Koh (2003), this study predicts a concave association between institutional ownership (INSTOWN) and earnings management. Applying a quadratic function specification, INSTOWN

and its square value (INSTOWNSQ) are introduced to capture the predicted concave relation. A concave relation predicts a positive coefficient for INSTOWN and a negative coefficient for INSTOWNSQ. According to Koh (2003), the estimated 'turning point' should not be over-interpreted, as there is no theoretical prediction in relation to the explicit ownership point at which this occurs. The result shows no significant effect of high and low institutional ownership on earnings management. This result may suggest that no non-linear relationship exists between institutional ownership and earnings management in the UK, contrary to findings in the US and Australia, but supporting the argument of the uniqueness of British institutional investors, as suggested by Khurshed *et al.* (2007).

Another sensitivity test is carried out to investigate the surprising result of the positive relationship between BLOCK and earnings management. The agency theory predicts that a concentrated blockholder ownership enables a large shareholder to have extra power on the firm's board, and this may be the initial motivation rather than holding the firm's equity, while low ownership stakes lead to little or no incentive to monitor managers as that activity is economically unbeneficial. Thus, blockholders that monitor managers' actions obtain the benefit of their monitoring only by the percentage of stocks they own but all have to bear the costs of their monitoring (Zhong *et al.*, 2007). Demsetz and Lehn (1985) support this view empirically, finding that large equity holders have incentives to bear the fixed costs of collecting information and engaging in monitoring management. Hence, smaller blockholders may behave differently from the larger blockholders that were found to encourage earnings management.

In the main test, BLOCK is defined as any investor that holds more than 10% of the company's shares. This test will investigate whether a blockholder that owns between 5% and 10% of the company's shares encourages the management to manipulate earnings figures. A dummy variable (BLOCK 5%) that has the value of one if a blockholder has more than 5% but less than 10% of the company shares and zero otherwise, is introduced and the main regression is re-tested.

Interestingly, BLOCK 5% does not significantly increase earnings management as did BLOCK 10%. The result, presented in table 6.24, shows that BLOCK 5% has no significant effect on earnings management practice. This may be due to the fact that small blockholders do not have

sufficient power to use accounting information to their own advantage or they expropriate other investors and stakeholders by colluding with management.

This result may extend Zhong *et al.*'s (2007) finding that outside blockholder ownership is positively associated with discretionary accruals. In a robustness test, they use a dummy variable of BLOCK using 20%, 25% and 30% cut-off points to test for the non-linear effect of ownership and they use different measures of earnings management but still find the same result. They assume that more block ownership leads to better governance but they find the opposite. However, they do not examine a lower ownership concentration, as this study does.

6.5.4.15 Internal and External Audit Separate Effects

Previous studies of the interaction between audit committee attributes and external audit services often assume that they are complementary, and that improved governance is associated with higher audit fees, although the evidence about this issue is inconclusive. Hay *et al.* (2008) revisit this issue and examine whether the 'substitution' or 'complementary control' views apply. They find that measures of internal auditing, corporate governance and concentration of ownership are all positively related to audit fees, consistent with the complementary explanation. However, to avoid the possibility of the potential substitution problem that may exist between external auditor attributes and audit committees attributes, this study constructs a separate test for each set of attributes.

Moreover, by testing each of the effects separately, it is possible to investigate the affect of the audit function on earnings management without considering the affect of the external auditor. Therefore, in this sensitivity analysis, two separate tests are conducted. The first test includes the external audit factors that relate to auditor independence and quality. In the second test, the internal audit functions, represented by audit committee effectiveness, are tested. The aim is to find out whether there is any substitution effect between the two groups of attributes.

Table 6.24
Non-Linear Effect of Institutional Ownership and Blockholders Ownership in Earnings Management

Effect of Long Term (INSTOWN)				**Effect of Block 5%**			
DAC	Coef.	z	P>z	DAC	Coef.	z	P>z
BRDIND	-0.046	-1.660	*	BRDIND	-0.048	-1.710	*
BRDMEET	0.001	1.000		BRDMEET	0.001	1.090	
BRDSZE	-0.003	-1.940	**	BRDSZE	-0.003	-1.870	**
WOMEN	-0.022	-0.600		WOMEN	-0.019	-0.510	
REMIND	0.009	1.240		REMIND	0.010	1.420	
NOMIND	-0.044	-2.900	***	NOMIND	-0.044	-2.900	***
CHAIRCOD	0.009	1.240		CHAIRCOD	0.010	1.460	
CHAIRND	-0.016	-1.690	*	CHAIRND	-0.016	-1.580	*
NEDFEE	-0.035	-2.540	***	NEDFEE	-0.035	-2.510	***
NEDMEET	-0.005	-0.760		NEDMEET	-0.005	-0.800	
MANGOWN	-0.038	-1.010		MANGOWN	-0.030	-0.790	
INSTOWN	0.001	0.770		INSTOWN	0.000	1.320	
INSTOWSQ	-0.004	-0.490		**BLOCK5%**	0.009	0.900	
BLOCK	0.017	2.590	***	IFRS	-0.002	-0.220	
IFRS	-0.002	-0.230		SIZE	0.041	4.770	***
SIZE	0.041	4.800	***	LEVG	-0.001	-3.700	***
LEVG	-0.001	-3.660	***	GROWTH	0.000	-0.020	
GROWTH	0.002	0.200		CFO	-0.215	-3.780	***
CFO	-0.201	-3.530	***	ROA	0.021	0.440	
ROA	0.011	0.230		_cons	-0.104	-2.250	**
_cons	-0.089	-1.820	**				
AdjR-2	14%			AdjR-2	13%		
Wald-Chi	79.11***			Wald-Chi	74.85***		

Table 6.25 Test of Internal and External Audit Effects Separately							
External Governance Effect				**Internal Governance Effect**			
DAC	Coef.	z	P>z	DAC	Coef.	z	P>z
NAF1	0.017	2.460	***	***AUDIIND***	-0.044	-2.940	***
AF1	-0.033	-3.610	***	***AUDEXP***	-0.023	-2.770	***
SPEAUD1	-0.019	-1.870	**	***AUDSIZE***	-0.005	-1.200	
				AUDMEET	-0.002	-0.860	
MANGOWN	-0.007	-0.170		MANGOWN	0.009	0.240	
IFRS	-0.009	-1.250		IFRS	-0.006	-0.910	
SIZE	0.033	3.760	***	SIZE	0.033	3.840	***
LEVG	0.000	1.540		LEVG	0.000	0.940	
GROWTH	-0.016	-1.780	*	GROWTH	-0.010	-1.120	
CFO	-0.260	-4.080	***	CFO	-0.283	-4.580	***
ROA	0.088	1.620	*	ROA	0.102	1.920	**
_cons	-0.150	-2.860	***	_cons	-0.069	-1.230	
AdjR-2	14%			AdjR-2	12%		
Wald-Chi	79.33***			Wald-Chi	77.19***		

The results for both models are consistent with those of the main test. The external auditor factors still have significant effects on earnings management, and some audit committee variables (independence and expertise) also show a significant effect on earnings management, as they do in the main test. Therefore, this study's findings are robust for the potential substitution problem.

6.6 Overall Summary

This chapter reports the results of empirical findings on the association between four important sets of variables, namely, board composition, ownership structures, audit committee effectiveness and external audit factors, and the extent of earnings management in the FTSE 350 Index firms over the period of four years from 2003 to 2006.

Two types of analysis, univariate and multivariate, are adopted to analyse the data of this study. The univariate test applies both T test and Mann Whitney tests. The multivariate analysis adopts a regression analysis. Several further analyses are conducted and discussed and other sensitivity tests are performed and compared with the main findings. In general, these findings suggest that firms with effective corporate governance mechanisms and an independent specialised auditor undertake less accruals management.

Overall, in terms of the first model, independent and large boards are effective in constraining earnings management practices. The results also suggest that an independent nomination committee performs its intended monitoring roles. Chairman independence, measured according to the Code's independence criteria for NEDs, is a more effective monitoring device than chairman independence that is measured according to the Code's independence criteria for chairmen.

Moreover, committed NEDs, measured by their fees, are an important monitoring mechanism that reduces earnings management. Additionally, blockholders with more than 10% ownership are found to collude with managers, while blockholders with less than 10% ownership have less power to effect the financial reporting. Other ownership factors, namely institutional ownership and managerial ownership, have no effect on the level of earnings management.

In terms of the second model, independent and industry specialised external auditors constrain managers' discretions. The results also suggest that an independent audit committee with financially experienced members performs its intended functions.

Regarding the direction of earnings management, generally speaking, corporate governance attributes relating to both board of directors and audit committee are good mechanisms for constraining negative earnings management but less effective in constraining positive earnings management, while the external auditor's attributes are good mechanisms for constraining positive earnings management less effective in constraining negative earnings management. An independent chairman may ignore managers' attempts to involve in positive earnings management while female directors do not take this risk.

The results of this study are consistent across both discretionary and current accrual measures for earnings management. Results are not sensitive to the type of industry or the size of the firm. Other sensitivity analyses use alternative methods of analysis and alternative independent variables to measure for the possible effects of other variables. These sensitivity analysis results are also largely consistent with the main results. The consistency in the results strengthens the validity of the results and the recommendations drawn from them.

Overall, although not all corporate governance variables support the stated hypotheses; this study has achieved its objective by identifying the attributes that answer the research question. This study, therefore, finds that the agency theory offers the most extensive explanation of the association between both the corporate governance and the external audit mechanisms and earnings management practice. The next chapter will provide a summary of this study, the implications of this research and avenues for further research.

Chapter Seven

Summary and Conclusions

7.1 Introduction

This chapter summarises this research study and its major findings. It will be organised as follows:

1. Restatement of the research problem and research question
2. Description of the research methods undertaken to answer the research question
3. Summary of the research results
4. Implications of this research
5. Limitations of this research
6. Avenues for further research

7.2 Restatement of the Research Problem and Research Question

Opportunistic earnings management practice produces accounting earnings that do not reflect a firm's true financial performance. Earnings management is likely to reduce the quality of reported earnings, their usefulness for investment decisions, and investor confidence in the financial reports. However, when managers' opportunistic behaviour is restricted by monitoring systems, accounting earnings are more reliable and of higher quality (e.g. Wild, 1996; Dechow *et al.*, 1996). Specifically, two monitoring systems, corporate governance and the external audit, are suggested by accounting theories and the prior literature to be effective in aligning the interests of managers and shareholders, reducing managers' opportunistic behaviour and, thus, improving the quality of reported earnings.

The aim of this research is to investigate, empirically, the effect of corporate governance and the external audit on earnings management practice in the UK. Therefore, the primary research question is:

"Do corporate governance and external audit constrain earnings management practice in the UK?"

7.3 Summary of Research Methodology

Using agency theory, this study explores the effects of the corporate governance and external audit systems on helping to increase financial reporting quality and to reduce opportunistic behaviour. A review of the relevant literature identifies four categories of corporate governance, namely, board of directors' composition, non-executive directors' (NEDs') commitment, audit committee effectiveness and ownership structures. The factors identified for the external audit are auditor independence and audit quality.

Consistent with prior research (e.g. Kothari *et al.*, 2001; Becker *et al.*, 1998; Jones, 1991; Healy, 1985), the study computes discretionary accruals using aggregate accruals models as a method to measure earnings management. Discretionary accruals are estimated using the magnitude of discretionary accruals as estimated by the performance adjusted accruals model (Kothari *et al.*, 2005).

Two models are constructed and a set of hypotheses stated. These models are tested using a sample of firms derived from the top 350 companies listed on the London Stock Exchange. Firms in the financial, mining and regulated industries are excluded due to their different accrual choices and valuation processes. The study covers the period of four financial years from 2003 to 2006. Nineteen hypotheses are derived from both models and tested using univariate and multivariate techniques to investigate whether corporate governance attributes and external audit factors significantly constrain discretionary accruals.

7.4 Summary of the Research Results

Nineteen hypotheses and the key findings of their tests are summarised in table 7.1. The overall results suggest that corporate governance attributes and external audit factors constrain the likelihood of earnings management practice in the UK.

Consistent with hypothesis 1 that there is a negative relationship between earnings management and the proportion of independent directors on the board, the result indicates that there is a negative and significant relationship between board independence and the indicator of earnings management.

Inconsistent with hypothesis 2, the coefficients of the number of board meetings is insignificant in all of the models. A possible explanation of this result is that the number of board meetings is an indication of the board's reaction to urgent business or special circumstances rather than an indication of the board's regular and effective monitoring of the financial reporting quality of the firm.

Considering hypothesis 3, this study finds that board size is significantly and negatively associated with earnings management. The result indicates that larger boards are more effective in financial reporting monitoring. Taken together, the results on board size and the impact of board meetings suggest that if the board is large, as is the case for most of the firms in this sample, board meetings may not be the best means of communication between directors.

Hypothesis 4 predicts that the independence of the board chairman is negatively associated with the level of earnings management. The negatively signed coefficient on chairman independence supports this hypothesis. This suggests that the chairman's independence plays an important role in constraining earnings management behaviour.

In terms of the comparison between chairman independence that is measured according to the Code's chairman independence criteria and chairman independence that is measured according to the Code's NED independent criteria, only the latter has a significant effect on earnings management. Interestingly, it is found that the code independence criteria might be weak since this study documents a positive but insignificant association between earnings management and chairman independence according to the Code's chairman independence criteria, whereas chairman independence measured by its NED independence criteria shows a significant negative relationship with earnings management.

Hypothesis 5 predicts that the number of women directors on the board is negatively associated with earnings management. The insignificantly negative coefficient on the number of women directors does not support this hypothesis. Therefore, in respect to gender diversity, this study does not support the view that gender diversity leads to superior earnings quality.

Table 7.1: Summary of Hypotheses and Findings

N	Hypothesis	Findings
H1	There is a negative relationship between independent boards and EM	Supported and significant at $p < 0.10$
H2	The number of board meetings is negatively associated with EM.	Not supported
H3	There is a negative relationship between large board size and EM.	Supported and significant at $p < 0.05$
H4	Chairman independence is negatively associated with EM.	Supported and significant at $p < 0.10$
H5	The number of women directors on the board is negatively related to EM.	Not supported
H6	Nomination committee independence is negatively associated with EM.	Supported and significant at $p < 0.01$
H7	Remuneration committee independence is negatively associated with EM.	Not supported
H8	NED private meetings frequency is negatively associated with EM.	Not supported
H9	NED fees are negatively associated with EM.	Supported and significant at $p < 0.01$
H10	High managerial ownership is negatively related to EM.	Not supported
H11	High institutional ownership is negatively related to EM.	Not supported
H12	A blockholding of 10% or more in a firm is negatively related to EM.	Not supported and significant at $p < 0.01$
H13	Audit committee independence is negatively associated with EM.	Supported and significant at $p < 0.01$
H14	Audit committee expertise is negatively associated with EM.	Supported and significant at $p < 0.01$
H15	Audit committee size is negatively associated with EM.	Not supported
H16	Audit committee meetings are negatively associated with EM.	Not supported
H17	Non-audit fees are positively associated with EM.	Supported and significant at $p < 0.01$
H18	Audit fees are negatively associated with EM.	Supported and significant at $p < 0.01$
H19	Firms audited by a specialised auditor have less EM.	Supported and significant at $p < 0.10$

Consistent with hypothesis 6 that there is a negative relationship between earnings management and the proportion of independent directors on the nomination committee, the result indicates that there is a negative significant relationship between an independent nomination committee and earnings management. This finding supports the regulatory stress on the importance of having independent nomination committees that enhance the likelihood of the independence of the nominated directors.

Hypothesis 7 predicts a significantly negative relationship between the occurrence of earnings management and fully independent remuneration committees, as recommended by regulatory codes. The result of this study does not support this hypothesis and it is in line with many other studies that document the lack of effectiveness of remuneration committees in the UK.

Using non-executive directors' fees as a measure of independent directors' commitment, the result shows that NED fees are significantly and negatively related with earnings management indicator, as proposed in hypothesis 8. This finding is consistent with the notion that committed independent outside directors are effective monitors of accrual management and that firms with highly paid outside directors tend to be less involved in accrual management.

Hypothesis 9 predicts a significantly negative relationship between occurrence of earnings management and NED private meetings. The results do not support this hypothesis. No significantly negative association exists between occurrence of earnings management and NED private meetings but the coefficient shows a negative direction, as hypothesised.

According to the agency theory, hypothesis 10 predicts that managerial ownership is negatively associated with earnings management. The coefficient is negative but insignificant. This coefficient remains negative in all the models. However, this hypothesis is not supported.

Hypothesis 11 reflects the view that the presence of institutional ownership in a firm is considered to be an element of good corporate governance and to provide an additional monitoring mechanism of the financial reporting process. This study's result does not support this view as the effect of institutional investors is found to be insignificant in all the models examined. However, this result is consistent with the previous UK evidence; a reasonable explanation of the non-finding result of

institutional ownership in this study is the different characteristics and strategy between the UK institutional investor and the US institutional investor as documented by prior research.

Blockholders ownership is surprisingly found to be positively related to earnings management, so hypothesis 12 is not supported by this study. This contradicts the argument that blockholders benefit the firm by aligning the interests of shareholders and directors. It could be that, along with the benefits that enhanced monitoring by blockholders may bring, this increased scrutiny may have negative side effects. When blockholders are closely monitoring the company's financial affairs, managers may feel pressurised to ensure that positive financial results are achieved. This type of predicament may provide incentives to managers for earnings management practice.

Another possible reason for this result is that large shareholders may expropriate the interests of other investors and stakeholders by colluding with management, as observed by Shleifer and Vishny (1997). Furthermore, concentrated ownership enables blockholders to use accounting information to their own advantage, for instance by ignoring income decreasing activity in order to diminish the other shareholders' residual claims (Claessens *et al.* 2000). However, further sensitivity analysis shows that blockholders with less than 10% ownership have less power to interfere the financial reporting.

In the second model, hypothesis 13 expects that audit committee independence will be negatively associated with the level of discretionary accruals. As expected, a negative association between independent audit committees and the empirical indicator of earnings management is found.

The significant results shown in this study for large board size, audit committee independence and nomination committee independence stress the argument raised by Klein (2002a) that board sub-committees (i.e. audit committee and nomination committee) assignments are influenced by board size since large boards have more directors to contribute to the sub-committees and, thus, the work load is distributed over a greater number of directors.

Hypothesis 14 predicts that audit committee expertise is negatively associated with the level of earnings management. The significant negatively signed coefficient on AUDEXP supports this

hypothesis. The result suggests that audit committees that include members with accounting or financial management expertise are likely to discourage management from manipulating the earnings in the annual reports.

Contrary to hypothesis 15, no significant relationship is found between the audit committee size and the level of discretionary accruals. This result may support the argument that larger audit committees do not significantly enhance the quality of financial reporting more than smaller ones.

The tests for hypothesis 16 regarding the relationship between number of audit committee meetings and earnings management show insignificant relationships. This result may support the argument that audit committee meetings are largely ceremonial and that they are ineffective in improving financial reporting. This finding may also mean that the number of its meetings is not a good indicator of the audit committee's diligence and activity, especially as both board meetings and NED private meetings did not show a significant effect on earnings management in this and many prior studies.

In term of external audit factors, the coefficient of different measures of non-audit fees are positive and significant suggesting that, as the magnitude of non-audit fees generated by a client increases, the level of discretionary accruals increases. This result supports hypothesis 17. Furthermore, the coefficient of audit fees are negative and significant, suggesting that, as the relative audit fees generated by a client increase, the level of earnings management decreases. This result supports hypothesis 18. This result suggests that clients who are a significant source of non-audit revenues for the audit firm may permit greater discretion over financial reporting by the auditor. Thus, this is consistent with regulatory concern that non-audit fees impair the auditor's independence.

Hypothesis 19 expects that auditor industry specialisation will be negatively associated with the level of discretionary accruals. As expected, industry specialised auditor shows a negative significant association with the level of discretionary accruals supporting the concerns about reduced audit quality due to a lack of client-specific knowledge.

When applying the alternative earnings management indicator that is based on current accruals rather than long term accruals, the results in both models are qualitatively the same, except for blockholders' ownership. Interestingly, BLOCK does not show a significant positive relationship with the second indicator of earnings management, which may make the previous findings in the main test sensitive and inconsistent with different types of accruals. This result suggests that blockholders may apply pressure on the management for long run return but not for short or current benefits.

This research also partitions the earnings management sample into firms with positive (income-increasing) discretionary accruals and firms with negative (income-decreasing) discretionary accruals, as the incentives to manage earnings could be different for the two directions.

The independent chairman is effective in constraining earnings management decreasing practice, but not effective in preventing managers from increasing the earnings through accruals management practice. Interestingly, the chairman's independence according to the Code (CHAIRCOD) has a positive and significant relationship with positive discretionary accruals, a result that supports this study's criticism of the Code's chairman independence criteria.

These results may be due to most of the chairmen being subject to share ownership (although supposedly insignificant) and they may not try to constrain manager's behaviour that would benefit them. The CHAIRCOD results is interesting as one of this study's criticisms of the Code's independence criteria is that they allow the chairman to have options and a large equity ownership and a chairman with such ownership may not apply pressure on management to constrain managing earnings upwards, as found in this analysis.

Interestingly, the WOMEN variable shows a negative and significant relationship at 10% level with positive discretionary accruals. The risk of increasing earnings may exceed the risk of decreasing earnings and, thus, this result may support the argument that women are more risk averse than men.

Blockholder ownership shows no significant relationship with negative discretionary accruals. However, it is still positively significant at a 1% level with positive discretionary accruals. This

result supports the view that concentrated ownership permits outside blockholders to use accounting information to their own advantage, require a higher return from firms in their portfolio and pose a bigger threat of intervention to the firm's management. Therefore, they may increase managers' incentives to conduct income-increasing earnings management, as also documented by Zhong *et al.* (2007).

Interestingly, the number of audit committee meetings (AUDMEET), which did not show a significant effect in the main regression for unsigned accruals, shows a significantly negative relation at the 5% level with negative discretionary accruals only. This is consistent with the findings of this study that audit committees in general are more effective in constraining downward earnings management.

The coefficient on industry specialised auditor (SPEAUD) is negative and significant only in the income-increasing discretionary accruals sample and insignificant in the income-decreasing discretionary accruals sample. This suggests that specialised auditors might be more effective in constraining the income-increasing type of earnings management.

Collectively, it seems that the specialised auditor and audit committee independence complement each other as the specialised auditor seems to be more concerned with constraining positive discretionary accruals, while the independent audit committee seems to be more concerned to reduce negative discretionary accruals. Unsurprisingly, audit committees behave in the same way as the other corporate governance attributes in that they are more effective in constraining managers' aggressive downward earnings management and less effective in cases of income increasing earnings management.

The results of this study are consistent across both discretionary and current accrual measures for earnings management. Results are not sensitive to the type of industry or the size of the firm. Other sensitivity analyses test alternative analysis methods, alternative measures of independent variables and the possibility of the effects of other variables. These sensitivity analysis results are also largely consistent with the main results. The consistency in the results strengthens their validity and recommendations drawn from them.

In general, these findings suggest that firms with effective corporate governance mechanisms and independent specialised auditors undertake less earnings management. Although not all corporate governance variables support the stated hypotheses, the study has achieved its objective by identifying the attributes that answer the research question. This study, therefore, finds that agency theory offers a generally good explanation of the associations between both corporate governance mechanisms and external audit factors with earnings management practice.

7.5 Potential Limitations of the Research

Although this thesis was theoretically conducted on a systematic basis under the supervision of qualified and specialised supervisors, there are potential limitations of this research, and the reader should be aware of these when interpreting its research findings. These research limitations are divided into two groups, namely, data and sample limitations and constructs and variables limitations. Nevertheless a considerable effort was made on ensuring that the objectives of this research study were met and the research question was answered.

7.5.1 Data and Sample Limitations:

The selection of the study sample is based on predetermined criteria. Examining a non-random sample of firms, as this study does, introduces an inherent bias and possible inaccurate associations arising from the sample design. However, because there is a limited number of firms that disclose comprehensive and relevant corporate governance information publicly, it is very difficult for corporate governance studies in the UK to select firms randomly.

Another sampling concern is sample size in relation to the validity of statistical conclusions and the probability that the statistical results are representative of the actual relationship within the data set. The sample used in this study is limited to the top 350 UK firms, thus introducing a size bias. However, the size bias is likely to reduce survivorship bias over the study period because larger firms are less likely than smaller firms to be delisted.

Finally, this study uses UK data; care should be taken in generalising its results to stock markets in other countries that have different regulations, practices, and economic features and whose capital market may exhibit different characteristics in terms of size, number of listed firms and market valuation. However, the similarity in the results of the study and the results of research in other countries indicates a high degree of generalisability. Even within the UK, generalisability of the results to all publicly listed firms is reduced by the exclusion of some firms due to the nature, or the small size, of the industry in which they operate.

7.5.2 Constructs and Variables Limitations

The use of earnings management in this study as an indicator of earnings quality may have some limitations. Whilst its use can be justified theoretically, it cannot be accurately measured empirically. This limitation is minimised through the clear operational definitions of the measure provided in chapter three.

In terms of the dependent variable (discretionary accruals), the literature indicates a high level of measurement errors in the accrual models commonly used to detect earnings management. Another limitation is that earnings management activities are often assumed to be opportunistic rather than informative but discretionary accruals may reflect either management's opportunistic behaviour or management discretion in signalling relevant information. Currently, no clear method exists for making this distinction.

Construct validity is important when variables are newly developed, as is the case with NEDs' commitment in this study. NEDs' fees and NEDs' private meetings are assumed to measure the commitments of NEDs and, even though a theoretical justification is presented in chapter three, these indicators may not accurately represent NEDs' commitment.

Some external audit variables such as non-audit fees, audit fees and industry specialised auditor are subject to great debate about whether they indicate auditor independence and audit quality. However, the existing literature offers no better measures and they are used extensively in auditing research.

Furthermore, the examination of a certain set of corporate governance attributes and external audit factors is a limitation that needs to be taken into account when interpreting the findings. If other corporate governance and external audit characteristics contribute to the quality of the accounting measures, then the parameter estimates may be biased.

A further limitation of the study is that there may be other factors that influence earnings quality, in addition to earnings management, corporate governance and the external auditor. While additional tests serve to limit variances in general company characteristics, and additional control variables are identified for inclusion in tests to control further potential influencers of earnings management incidence, it is highly probable that other factors, not controlled in these tests, could affect financial reporting quality. However, as this study does not aim to test causality, but rather the relation between earnings management and attributes of corporate governance and the external audit, the affect of this limitation on the findings might be considered to be of minor consequence.

7.6 Implications of the Research

Despite its potential limitations, this research contributes to the existing literature on the effect of corporate governance and the external audit on earnings management and on improving the quality of reported earnings in general. It documents evidence that both corporate governance and the external auditor help to constrain earnings management.

This study has practical implications for corporations' needs to satisfy shareholders and to attract potential investors. Measuring the impact of monitoring systems such as corporate governance and the external audit allows decision makers to evaluate the role of these monitoring systems in enhancing shareholders' perception of the quality of financial information. If shareholders are able to obtain reliable information about corporate performance, their financial decisions can become more accurate and effective.

This study reveals findings that will enable investors and stock market participants to improve their decision-making. Measuring the different aspects of corporate governance and the external audit

allows investors to be mindful of management's capacity to manipulate accounting earnings for opportunistic purposes, and to evaluate the reliability of accounting numbers.

The corporate governance authorities, especially in the UK, can use this study as empirical support for developing their regulations and making further recommendations on corporate governance. Stock market authorities can also employ this study's results to evaluate the current disclosure requirements of corporate governance practices and the role of the external auditor in improving the quality of accounting reports. New corporate governance regulations and revisions of existing corporate governance codes should be based on evidence from empirical studies such as evidence offered by this research.

This study provides evidence that not only does board of directors' independence enhance the quality of financial information but also that the commitment of board members is important in this regard. Readers of accounting reports can use the data on NEDs' fees as an indicator of NEDs' professionalism and commitment. A central theme of recent corporate governance reforms in UK, US and internationally is the requirement for a greater proportion of independent directors on the board and its sub-committees so that the interests of shareholders can be properly represented (Higgs Report 2003, p. 35). Indeed, this study finds that board independence, audit committee independence, nomination committee independence and chairman independence are all important attributes that significantly reduce earnings management. Thus, NEDs' independence should be safeguarded and strengthened in future corporate governance recommendations.

This study's results also show the importance of the neglected role of the chairman in enhancing the quality of reported earnings. This study fails to find evidence that the chairman's independence, as measured by the chairman's independence criteria stated in the UK Corporate Governance Combined Code (2003), produces effective corporate governance. But it does show that the chairman's independence, as measured by the Code's criteria for non-executive director independence, significantly decreases the propensity for earnings management. This suggests that a stricter definition of the chairman's independence would enhance the effectiveness of corporate governance. This result may indicate that the Code's current criteria for chairman independence do not deliver its expected benefits. This research suggests that chairmen should be subject to the same

strict criteria for independence that the Code recommends for NEDs, which this study shows might lead to better detection of earnings management. Therefore, consideration needs to be given to amending the chairman independence recommendations of the UK Corporate Governance Combined Code (2003) to prohibit participation in the firm's employee stock options and/or pension schemes. Furthermore, like NEDs, a chairman should be considered non-independent when serving on the board for more than nine years.

This study also finds that the diligence of the board of directors and its sub-committees cannot be measured merely by the number of meetings. Thus, better measures of directors' diligence, such as attendance at meetings, length of meetings, meeting agendas, and participation in meetings, should be considered for inclusion in future codes and disclosure requirments.

Regarding the effectiveness of the audit committee in constraining earnings management, this research provides support for only two of the four recommendations of the UK Corporate Governance Combined Code (2003). The recommendation in Smith's guidance that there should be at least three meetings during the year is not supported. It would seem that the number of meetings should be left to the committee to decide based on the need for such meetings. The recommendation that an audit committee should consist of at least three independent members is also not supported. This study shows that audit committees with three or more members are not more effective than those with fewer members. However, the other two recommendations, namely, that audit committees should be fully independent and that they should include a financial expert, are empirically supported.

The UK Corporate Governance Code (2003, p.12) recommends that "Except for smaller companies, at least half the board, excluding the chairman, should comprise non-executive directors determined by the board to be independent". This study's results show a significant negative relationship between earnings management and a majority of independent non-executive directors on the board, and, this supports this Code recommendation.

The results of this research provide evidence to support the ongoing regulatory concern about the impairment of the auditor's independence if audit and non-audit services are provided

simultaneously. This study finds that auditors' independence is impaired when they conduct non-audit services for their audit clients and that this, in turn, affects the quality of financial information.

The findings of the study help to identify which corporate governance attributes are likely to impact on financial reporting quality. They show that the independence of the board of directors, an independent chairman, an independent nomination committee and an independent audit committee are all important attributes, and that larger boards and a financial expert sitting on the audit committee are effective in enhancing earnings quality. While the 2003 UK Code addresses each of these issues to an extent, evidence presented in this study indicates that these important facets of corporate governance may warrant further consideration.

Furthermore, this study contributes to the ongoing debate on the feasibility of harmonising corporate governance practices around the globe. Theoretically, in the literature review chapter, and empirically, in the results and discussion chapter, this study shows that corporate governance efficiency differs in different countries, probably as a result of their various macro and micro economic characteristics such as stock markets regulations, disclosure requirements, firms' ownership structures and firms' size.

Finally, this study contributes to the corporate governance research by providing comprehensive statistics on the issue of corporate governance compliance in the UK. Data shows that FTSE 350 Index firms have a high compliance with recommendations about board of directors' independence and audit committee independence and expertise. However, the corporate governance recommendations concerning the independence of remuneration and nomination committees, NEDs' private meetings and gender diversity still show unsatisfactory compliance.

7.7 Avenues for Future Research

This study's results provide evidence that a number of corporate governance attributes are significantly related to the incidence of earnings management. However, there are several areas that are not covered by this study but that could be relevant to corporate governance and the occurrence of earnings management.

Thus, one possible avenue for future research is testing additional corporate governance attributes that may influence earnings quality. Examples for such additional attributes are the size of remuneration and nomination committees and the number of their meetings, whether the CEO sits on these committees, and attendance rates at meetings of the board and its sub-committees.

Another avenue for further research is to take the corporate governance attributes and external audit factors found to be effective in constraining earnings management in this study and investigate their effects on other aspects of earnings quality, such as auditor opinion, accounting conservatism, restatements and fraud. It would also be interesting to investigate the effect of these factors on a firm's performance and audit quality.

Although earlier research shows that institutional ownership, block ownership and high managerial ownership reduces the likelihood of earnings management, the empirical evidence provided by this study indicates that no such relationship exists. This contradiction in findings suggests that the influence of these various ownership structures on managers opportunistic behaviour may go beyond what is recommended by regulation; conceivably, there may be other aspects of these ownership structures, not tested by this study, that determines the effectiveness of these monitoring mechanisms.

Since this study's results relating to ownership structures are consistent with the previous UK evidence, questions arise about the role and characteristics of British institutional investors and blockholders and their awareness and reactions toward management discretions. Ferreira and Matos (2006) and Khurshed *et al.* (2007) document some major differences between institutional investors in the US and the UK but it would be interesting to look further at institutional and blockholders' effectiveness as monitoring devices in different countries. If there are important differences, variables based on regulatory recommendations would understandably exhibit little variance. The true differences in the effectiveness of ownership structures would necessitate the testing of additional variables such as the presence of long-term institutional investors and blockholders on company boards and the interaction between managerial ownership and other corporate governance attributes.

An additional area worthy of further research is the effect of different types of non-audit fees on auditor independence and, thus, on audit quality. Although this research finds that non-audit fees impair auditor independence and encourage earnings management, some types of non-audit services may enhance the auditor's knowledge and familiarity with the client's business.

This study and previous research documents the positive influence of specialised auditors on audit quality and earnings quality. However, it would be of interest to explore more thoroughly why this association occurs. What exactly distinguishes the specialised auditor from others? To what extent does the specialised auditor factor interact with other monitoring factors, such as audit committees, non-audit fees, Big 4 audit firms and auditor turnover? Exploring these issues could contribute substantially to the literature on corporate governance and on audit and earnings quality.

As this study covers large firms and excludes certain industries, an opportunity arises for further research into the impact of both corporate governance and the external audit on earnings management in smaller companies or in companies in the regulated, mining and financial industries.

Replication of this research using data from other international stock markets is likely to provide insight into different markets responses to corporate governance, external auditor roles and earnings management. Furthermore, as motives for practising earnings management is well covered in the literature, it would also be of great interest if future research could address the issue of managers' motives for complying with corporate governance, whether that is to increase perceived reporting quality, to satisfy shareholders and regulators, or to achieve some other objectives.

7.8 Summary

This chapter presents a summary and the conclusions of this research. After restating the research problem and question, it outlines the research methods undertaken to answer the research question. The results of this research are summarised and their implications are discussed. The potential limitations of this research are then presented before avenues for future research are highlighted.

The study proposes and finds that corporate governance and the external auditor, collectively, constrain earnings management. The results reveal that board size and independence, audit committee independence and competence, nomination committee independence, chairman independence, the level of NEDs' fees and independent and specialised external auditor are all negatively associated with earnings management at significant levels.

The primary contribution to knowledge of the research is to extend the literature on the role of corporate governance and the external audit in constraining earnings management practice. Its results are useable by stock market participants in their evaluation of the roles of corporate governance and the external auditor in enhancing the quality of reported earnings. The findings will also help regulators to define effective corporate governance attributes and to assess the requirements for disclosure of corporate governance practices.

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